#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.11.95 Test oil : ISO 4113

Part no. : 0 460 494 372 Pump designation : VE4/9F2250R571-1

Customer-spec. information
Customer : OPEL
Motor : 1,7 DTL
Power KW : 58.0

#### TEST BENCH REQUIREMENTS

Calibrating oil

return

temperature °C : 45 Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500 Aneroid pressure hPa : 1000

Setting mm : 4.2
Tolerance mm +-: 0.1

Shutoff solenoid

KSB/AFB Volt : 12

12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 5.4
Tolerance bar +: 0.3
Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1200 Aneroid pressure

hPa : 1000

Del. quantity

cm3/1000 strokes : 33.3

Tolerance cm3/1000 str. +-: 0.5 Spread

cm3/1000 strokes : 2.5 Check tolerance

cm3/1000s. : 2.5

Shutoff solenoid Volt

Volt : 12

KSB/AFB Volt : 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance

cm3/1000s. : 2.5

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 4.5 Tolerance

cm3/1000 str. +: 0.

Shutoff solenoid

Volt : 12

	- Shutoff solenoid
KSB/AFB Volt : 12	- Volt : 12
IDLE DELIVERY	- KSB/AFB Volt : 12
Rated speed rpm : 450	
Del. quantity cm3/1000 strokes : 17.0 - Tolerance -	- LOAD-DEPENDENT START OF DELIVERY - SETTING
cm3/1000 str. + : 1.0 - Spread	DELIVERY DIFFERENCE
cm3/1000 strokes : 2.5 Shutoff solenoid	- Rated speed rpm : 1000 - Pressure hPa : 1000
Volt : 12	- Del. quantity
KSB/AFB Volt : 12	cm3/1000 strokes : -9.0 Tolerance
HIGH IDLE SETTING	- cm3/1000 str. + : 1.0 - Shutoff solenoid
Rated speed rpm : 540	- Volt : 12
Del. quantity cm3/1000 strokes : 9.0	- KSB/AFB Volt : 12
Tolerance	PRESSURE DIFFERENCE
cm3/1000 str. +-: 1.0 Shutoff solenoid	Data dama dama 4000
Volt : 12	- Rated speed rpm : 1000 - Aneroid pressure
KSB/AFB Volt : 12	- hPa : 1000 - Del. quantity
FULL-LOAD SPEED REGULATION	- cm3/1000 strokes : -0.2 - Tolerance
1	- cm3/1000 str. + : 0.1
Rated speed rpm : 2550 Pressure hPa : 1000	- Shutoff solenoid - Volt : 12
Del. quantity	- Volt : 12
cm3/1000 strokes : 24.0 Tolerance	- KSB/AFB Volt : 12
cm3/1000 str. + : 2.0 Shutoff solenoid	TIMING-DEVICE TRAVEL DIFFERENCE
Volt : 12	- Rated speed rpm : 1000 - Aneroid pressure
KSB/AFB Volt : 12	- hPa : 1000 - Del. quantity
STARTING FUEL DELIVERY	- cm3/1000 strokes : -0.6 - Tolerance
Rated speed rpm : 100  Del. quantity	- cm3/1000 str. + : 0.1 - Shutoff solenoid
cm3/1000 strokes : 44.0	- Volt : 12
cm3/1000 str. + : 8.0	- KSB/AFB Volt : 12
Shutoff solenoid + 12 + 12	
+	- INJECTION—PUMP TEST SPECIFICATIONS
KSB/AFB Volt : 12 +	TIMING DEVICE CHARACTERISTIC
SET GRADUATED STARTING DELIVERY	-
CONTROL LEVER, ICLE STOP	- Rated speed rpm : 2250 - Aneroid pressure
Rated speed rpm : 100	- hPa : 1000
Del. quantity + cm3/1000 strokes : 44.0 +	SV traval mm . 77
THE TOUCH SUPPLIES : 44.0	- SV travel mm : 7.7

Tolerance mm +: 0.3 Check	+ Supply pomp + pressure bar : 5.0
tolerance mm + : 0.6	† Tolerance bar + : 0.3
Shutoff solenoid Volt : 12	+ Shutoff solenoid + Volt : 12
KSB/AFB Volt : 12	+
	+ KSB/AFB Volt : 12
Rated speed rpm : 1000 Aneroid pressure	+ OVERFLOW QUANTITY
hPa : 1000	Rated speed rpm : 2250 Aneroid pressure
SV travel mm : 1.7	+ hPa : 1000
Tolerance mm +-: 0.3 Check	+ Overflow quantity + ccm/10s : 97.2
tolerance mm + : 0.6	+ Tolerance
Shutoff salenoid Volt : 12	+ ccm/10s + : 41.6
	Check tolerance
KSB/AFB Volt : 12	+ ccm/10s +: 41.6 + Shutoff solenoid
Rated speed rpm : 400	+ Volt : 12
Aneroid pressure hPa : 1000	KSB/AFB Volt : 12
SV travel mm : 1.8	+ Rated speed rpm : 700
Tolerance mm + : 1.0	+ Aneroid pressure
Check tolerance mm + : 1.2	+ hPa : 1000 + Overflow quantity
Shutoff solenoid	+ ccm/10s : 63.8
Volt : 12	+ Tolerance + ccm/10s + : 22.2
Rated speed rpm : 800	+
Aneroid pressure hPa : 1000	+ Check tolerance + ccm/10s +-: 22.2
SV torond on 2.0	† Shutoff solenoid
SV travel mm : 3.0 Tolerance mm +-: 1.0	† Volt : 12
Check	KSB/AFB Volt : 12
tolerance mm +-: 1.2 Shutoff solenoid	† DELIVERY AND BREAKAWAY CHARACTERISTIC
Volt : 12	+
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Rated speed rpm : 2550 + Aneroid pressure
Rated speed rpm : 2250	hPa : 1000 + Del. quantity
Aneroid pressure	+ cm3/1000 strokes : 24.0
hPa : 1000 Supply pomp	+ Tolerance + cm3/1000 str. + : 2.0
pressure bar : 8.5	+ Check tolerance
Tolerance bar + : 0.3 Shutoff solenoid	+ cm3/1000s. +-: 4.0 + Shutoff solenoid
Volt : 12	Volt : 12
KSB/AFB Volt : 12	KSB/AFB Volt : 12
Rated speed rpm : 1000 Aneroid pressure	Rated speed rpm : 2725 Aneroid pressure
hPa : 1000	hPa : 1000
	+

Del. quantity		.1
cm3/1000 strokes : Shutoff solenoid	7.0	Rated speed rpm : 700 Aneroid pressure
Volt :	12	hPa : 1000 Del. quantity
KSB/AFB Volt :	12	cm3/1000 strokes : 31.5
Rated speed rpm : Aneroid pressure	2950	+ cm3/1000 str. + : 1.5 + Check tolerance
hPa : Del. quantity	1000	+ cm3/1000s. + : 3.0 + Shutoff solenoid
cm3/1000 strokes : Tolerance	2.0	Volt : 12
cm3/1000 str. + : Check tolerance	2.0	KSB/AFB Volt : 12
cm3/1000s. +: Shutoff solenoid	2.0	Rated speed rpm : 1200 Aneroid pressure
Volt :	12	+ hPa : 1000 + Del. quantity
KSB/AFB Volt :	12	cm3/1000 strokes : 33.3
Rated speed rpm : Aneroid pressure	2250	cm3/1000 str. +: 0.5 Check tolerance
hPa : Del. quantity	1000	cm3/1000s. +: 2.3 + Shutoff solenoid
cm3/1000 strokes : Tolerance	36.5	+ Volt : 12
cm3/1000 str. + : Check tolerance	1.3	+ Rated speed rpm : 700 + Aneroid pressure
cm3/1000s. + : Shutoff solenoid	2.3	+ hPa : 50 + Tolerance
Volt :	12	+ cm3/1000 str. + : 0.5 + Check tolerance
KSB/AFB Volt :	12	+ cm3/1000s. +: 0.5 + Check tolerance
Rated speed rpm : Del. quantity	500	+ cm3/1000s. +: 0.5 + Shutoff solenoid
cm3/1000 strokes : Tolerance	31.0	+ Volt : 12
cm3/1000 str. + : Check tolerance	2.5	+ KSB/AFB Volt : 12
cm3/1000s. +: Shutoff solenoid	3.0	+ Rated speed rpm : 700 + Aneroid pressure
Volt :	12 12	+ hPa : 170 + Del. quantity
Rated speed rpm :	1800	+ cm3/1000 strokes : 2.4 + Tolerance + cm3/1000 str. +- : 1.0
Aneroid pressure hPa :	1000	Check tolerance + cm3/1000s. +-: 1.0
Del. quantity cm3/1000 strokes :	36.2	Shutoff solenoid Volt : 12
Tolerance cm3/1000 str. +:	1.5	KSB/AFB Volt : 12
Check tolerance cm3/1000s. +-:	2.3	100/110 1011
Shutoff solenoid Volt :	12	ELECTR. SHUTOFF
KSB/AFB Volt :	12	CONTROL LEVER, IDLE STOP

Datad around run . /OF	1
Rated speed rpm : 485 Del. quantity	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes : 1.5	TIME DELICE TOTAL DELICETOR
Tolerance	Rated speed rpm : 1000
cm3/1000 str. +-: 1.5	+ Aneroid pressure
Check tolerance	+ hPa : 1000
cm3/1000s. +-: 1.5	+ Del. quantity
Spread	+ cm3/1000 strokes : -0.6
cm3/1000 strokes : 5.0	+ Tolerance
	+ cm3/1000 str. + : 0.1
FULL-LOAD STOP CONTROL LEVER	+ Check tolerance
	+  cm3/1000s. + : 0.1
Rated speed rpm : 485	† Shutoff solenoid
Del. quantity	† Volt : 12
cm3/1000 strokes : 1.5	t kendern with
Tolerance	+ KSB/AFB Volt : 12
cm3/1000 str. +-: 1.5	DEL TUEDY DIFFERENCE
Spread cm3/1000 strokes : 5.0	DELIVERY DIFFERENCE
Check tolerance	Rated speed rpm : 1000
cm3/1000s. +-: 1.5	+ Rated speed rpm : 1000 + Aneroid pressure
Spread	+ hPa : 1000
cm3/1000 strokes : 5.0	+ Del. quantity
	cm3/1000 strokes : 6.0
	+ Tolerance
	+ cm3/1000 str. +: 1.0
	+ Check tolerance
	+ cm3/1000s. +: 1.0
IDLE DELIVERY	+ Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 485	+
Del. quantity	+ KSB/AFB Volt : 12
cm3/1000 strokes : 9.0	+
Tolerance	+ TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 str. + : 2.5	+
Shutoff solenoid	+ Rated speed rpm : 1000
Volt : 12	+ Aneroid pressure
	† hPa : 1000
KSB/AFB Volt : 12	+ Tolerance mm +-: 0.3
	+ Check
CHECKING I CAN-DEDENINGHT	tolerance mm ÷: 0.4
CHECKING LOAD-DEPENDENT START OF DELIVERY	+ Shutoff solenoid + Volt : 12
START OF DELIVERT	† Volt : 12
DELIVERY DIFFERENCE	KSB/AFB Volt : 12
DEELVENT DIFFERENCE	T KOBIATO VOCC : 12
Rated speed rpm : 1000	
Aneroid pressure	EXHAUST-GAS RECIRCULATION
hPa : 1000	
Del. quantity	+ Rated speed rpm : 1000
cm3/1000 strokes : -11.0	+ Aneroid pressure
Tolerance	hPa : 1000
cm3/1000 str. +-: 4.0	+ Del. quantity
Check tolerance	+ cm3/1000 strokes : 16.0
cm3/1000s. +: 4.0	+ Tolerance
Shutoff solenoid	+ cm3/1000 str. +: 1.0
Volt : 12	+ Check tolerance
	+ cm3/1000s. $+$ : 2.5
KSB/AFB Volt : 12	cm3/1000s. +-: 2.5 Shutoff solenoid
	+ cm3/1000s. $+$ : 2.5

A05

KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 32.0

Tolerance

cm3/1000 str. + : 5.0

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 250

Del. quantity

cm3/1000 strokes : 50.0

Tolerance

cm3/1000 str. + : 10.0

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 5,4
Tolerance mm + : +0,2
Dimension MS mm : 0,9
Tolerance mm + : +0,2

MICROSWITCH SET

: ARF 12,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 24,2..26,2

Control Lever

position YB mm : 53,0..61,6

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03.01.96 Test oil : ISO 4113

: 0 460 424 104 Part no. Pump designation : VE4/12F1200R572

Customer-spec. information : MAN Customer

: D 0824 LFL 01 Motor Power KW 114.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C Tolerance °C + :

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

: 1 688 901 110 assembly

Opening pressure

bar 250 Tolerance bar +:

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 × Length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 850

Aneroid pressure

hPa 1200

Setting mm 2.6 Tolerance mm 0.2

KSB/AFB Volt 12 :

### SUPPLY PUMP PRESSURE

Rated speed rpm : 850

Aneroid pressure

hPa 1200

Supply pomp

pressure bar 6.7 Tolerance bar +-: 0.3

KSB/AFB Volt 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000

Aneroid pressure

1200

Del. quantity

cm3/1000 strokes : 108.0

Tolerance

cm3/1000 str. + :0.5 Spread

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. 4.5

KSB/AFB Volt : 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550

Del. quantity

cm3/1000 strokes : 61.0

Tolerance

cm3/1000 str. + :0.5

Check tolerance

cm3/1000s.4.5

KSB/AFB Volt : 12

#### IDLE SETTING

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 15.0

Tolerance

cm3/1000 str. +-: 2.0

Spread

cm3/1000 strokes : 6.0

Check tolerance	+ Aneroid pressure
cm3/1000s. : 6.5	+ hPa : 1200
	1
KSB/AFB Volt : 12	+ SV travel mm : 1.4
10017110	+ Tolerance mm + : 0.4
	Check
	tolerance mm + : 0.7
<b>5</b>	†
FULL-LOAD SPEED REGULATION	+ KSB/AFB Volt : 12
	+
Rated speed rpm : 1300	+ Rated speed rpm : 1200
Pressure hPa : 1200	+ Aneroid pressure
Del. quantity	+ hPa : 1200
cm3/1000 strokes : 70.0	1
Tolerance	SV travel mm : 4.8
cm3/1000 str. +-: 3.0	
CIID/ 1000 Str. +-: 5.0	+ Tolerance mm +: 0.4
transferm with	+ Check
KSB/AFB Volt : 12	tolerance mm + : 0.4
	+
STARTING FUEL DELIVERY	+ KSB/AFB Volt : 12
	+
Rated speed rpm : 100	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
Del. quantity	
cm3/1000 strokes : 130.0	Rated speed rpm : 1200
Tolerance	
	+ Aneroid pressure
cm3/1000 str. + : 30.0	+ hPa : 1200
	+ Supply pomp
KSB/AFB Volt : 12	+ pressure bar : 8.4
	+ Tolerance bar + : 0.3
SET GRADUATED STARTING DELIVERY	1
CONTROL LEVER, IDLE STOP	+ KSB/AFB Volt : 12
CONTINUE ELICITY IDEE OF OF	T KOOTAID VOCC . IE
Rated speed rpm : 100	Dated aread non . EEO
• • • • • • • • • • • • • • • • • • • •	Rated speed rpm : 550
Del. quantity	+ Aneroid pressure
cm3/1000 strokes : 45.0	+ hPa : 1200
Tolerance	+ Supply pomp
cm3/1000 str. + : 1.0	+ pressure bar : 5.2
	+ Tolerance bar +: 0.3
KSB/AFB Volt : 12	
	+ KSB/AFB Volt: 12
	T ROBIATO VOCC 12
	T OVEREI OU OUANITATY
	+ OVERFLOW QUANTITY
THIRDTON DUMP TEST OPERATE CATTONS	T 2-4
INJECTION-PUMP TEST SPECIFICATIONS	+ Rated speed rpm : 550
	+ Overflow quantity
TIMING DEVICE CHARACTERISTIC	+
	+ Tolerance
Rated speed rpm : 950	+ ccm/10s +: 22.2
Aneroid pressure	1
hPa : 1200	- Check tolerance
. 1200	
61/ Americal and	+ ccm/10s + : 22.2
SV travel mm : 3.8	†
Tolerance mm +: 0.4	+ KSB/AFB Volt : 12
Check	+
tolerance mm +-: 0.7	+ Rated speed rpm : 1200
	+ Aneroid pressure
KSB/AFB Volt : 12	+ hPa : 1200
	Overflow quantity
	T OVERTION QUARTERLY
Poted speed rom • 750	07 2
Rated speed rpm : 750	+ ccm/10s : 97.2
Rated speed rpm : 750	+ ccm/10s : 97.2

Tolerance			+	Del. quantity		
ccm/10s +-	. :	41.6	1	cm3/1000 strokes	•	84.0
			1	Tolerance	•	34.0
Check tolerance			1	cm3/1000 str. +-	•	0.5
ccm/10s +-	. :	41.6	1	Check tolerance	•	0.5
	•		1	cm3/1000s. +		2.5
KSB/AFB Volt	•	12	1	CIID7 (0003.	•	2.5
KOBARI D VOCE	•	12	T	KCD/ACD Walt		40
DELTHEDY AND DOCA	MALIAN	/ CHADACTEDICTI	. T	KSB/AFB Volt	:	12
DELIVERY AND BREA	NAMA	CHARACIERISIII	• †	D-1-1		4200
Dat damandam		4700	†	Rated speed rpm	:	1200
Rated speed rpm	:	1300	+	Aneroid pressure		
Aneroid pressure		4000	+	hPa	:	1200
hPa	:	1200	†	Del. quantity		
Del. quantity			+	cm3/1000 strokes	:	103.5
cm3/1000 strokes	:	70.0	+	Tolerance		
Tolerance			+	cm3/1000 str. +-	:	2.5
cm3/1000 str. +	:	3.0	+	Check tolerance		
Check tolerance			+	cm3/1000s. +-	:	4.0
cm3/1000s. +-	:	8.5	+			
			+	KSB/AFB Volt	:	12
KSB/AFB Volt	:	12	1			
			1	Rated speed rpm	:	700
Rated speed rpm	:	1400	1	Aneroid pressure	٠	. 55
Aneroid pressure	•		1	hPa		1200
hPa	•	1200	1	Del. quantity	•	1200
Del. quantity	•	1200	1	cm3/1000 strokes	:	112.5
cm3/1000 strokes		7.5	1	Tolerance	•	112.5
Check tolerance	•	1.5	I	cm3/1000 str. +-		2.5
cm3/1000s. +-		7.5	T		•	2.5
CIID/10003.	•	1.5	T	Check tolerance		
KOD MED WILL	_	40	Ť	cm3/1000s. +-	:	4.0
KSB/AFB Volt	:	12	†	1001000000		4.5
		4150	†	KSB/AFB Volt	:	12
Rated speed rpm	:	1450	+			
Aneroid pressure			+	Rated speed rpm	:	850
hPa	:	1200	+	Aneroid pressure		
Del. quantity		1.0	+	hPa	:	1200
cm3/1000 strokes	:	1.5	+	Del. quantity		
Tolerance			+	cm3/1000 strokes	:	114.0
cm3/1000 str. +-	:	1.5	+	Tolerance		
Check tolerance			+	cm3/1000 str. +-	:	2.5
cm3/1000s. +-	:	1.5	+	Check tolerance		
			+	cm3/1000s. +-	:	4.0
KSB/AFB Volt	:	12	+		•	
			1	KSB/AFB Volt	:	12
Rated speed rpm	:	1350	1	1105/ 11/2 1000	•	, -
Aneroid pressure			1	Rated speed rpm	:	550
hPa	:	1200	1	Aneroid pressure	•	220
Del. quantity	•	1200	1	hPa		1200
cm3/1000 strokes		35.0	$\mathbf{I}$	Del. quantity	•	1200
Tolerance	•	33.0	T	cm3/1000 strokes		114.0
cm3/1000 str. +-		20.0	T	Tolerance	•	114.0
Check tolerance	•	20.0	T			/ 5
cm3/1000s. +-		20.0	T	cm3/1000 str. +	:	4.5
CIB/10005.	•	20.0	Ť	Check tolerance		
VODIATO V-14		12	Ť	cm3/1000s. +-	:	6.0
KSB/AFB Volt	:	12	Ť	1/05/455 N. I.		40
Dahad 1		CCO.	†	KSB/AFB Volt	:	12
Rated speed rpm	:	550	†	5		4000
Aneroid pressure		400	†	Rated speed rpm	:	1000
hPa	:	400	+	Aneroid pressure		
			+	hPa	:	1200

Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	
MECHANICAL SHUTOF	F
Rated speed rpm Aneroid pressure hPa	: 1200 : 1200
Del. quantity cm3/1000 strokes	
Tolerance cm3/1000 str. +-	: 1.5
Check tolerance cm3/1000s. +-	: 1.5
KSB/AFB Volt	: 12
IDLE DELIVERY	
Rated speed rpm	: 500
Del. quantity cm3/1000 strokes	: 1.5
Tolerance cm3/1000 str. +-	
Check tolerance cm3/1000s. +	: 1.5
KSB/AFB Volt	: 12
START TRANSITION	
Del. quantity	: 370
cm3/1000 strokes Tolerance	: 70.0
cm3/1000 str. +	: 20.0
KSB/AFB Volt	: 12
Rated speed rpm Del. quantity	: 270
cm3/1000 strokes Tolerance	: 95.0
cm3/1000 str. +-	: 15.0

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm + : +-0,1
Dimension KF mm : 6,4
Tolerance mm + : +-0,2
MS1 dimension mm : 1,5
Tolerance mm + : +0,15/-0,1
KSB travel mm : 7,1

MICROSWITCH

SET

mm : GST 71,9

CONTROL LEVER POSITION

SET

Control Lever

position YA mm : 37,4..40,4

Control lever

position YB mm : 36,9..42,1

End of test-specification sheet

KSB/AFB Volt : 12

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 17,10,95 Test oil : ISO 4113 : 0 460 414 109 Part no. Pump designation: VE4/11F2000R573 Customer-spec. information : IVECO-SOFIM Customer Motor : 8140.07.3700 TEST BENCH REQUIREMENTS Calibrating-oil return temperature °C Tolerance °C +-: Overflow restriction mm 0.75 0.35 Inlet press. bar : Tolerance bar +-: 0.05 Test nozzle holde : 1 688 901 027 assembly Opening pressure 250 bar Tolerance bar + : Test lines : 1 680 750 073 Outside diameter : 6.00 x inside diameter: 2.00 x length mm 450

Setting mm 2.9 Tolerance mm 0.1 Shutoff solenoid Volt 12 SUPPLY PUMP PRESSURE Rated speed rpm 1100 Supply pomp pressure bar 6.3 Tolerance bar + : 0.3 Shutoff solenoid 12 Volt FULL-LOAD DELIV. WITHOUT BOOST PRESSURE 1100 Rated speed rpm Rated speed rpm 500 Del. quantity cm3/1000 strokes : 48.0 Del. quantity cm3/1000 strokes : 33.0 Tolerance cm3/1000 str. +-:0.5 Tolerance cm3/1000 str. + :0.5 Spread cm3/1000 strokes : 3.5 Shutoff solenoid Volt 12 Shutoff solenoid Volt 12 Check tolerance cm3/1000s. 4.5 IDLE SETTING Rated speed rpm 350 Del. quantity cm3/1000 strokes : 12.5 Tolerance cm3/1000 str. + :2.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. 6.5 FULL-LOAD SPEED REGULATION Rated speed rpm 2200 Del. quantity cm3/1000 strokes :

30.0

1600

Rated speed rpm

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Tolerance	1
cm3/1000 str. + : 2.0 Shutoff solenoid	SUPPLY PUMP PRESSURE CHARACTERISTIC
Volt : 12	Rated speed rpm : 2000 Supply pomp
STARTING FUEL DELIVERY	pressure bar : 8.7 + Tolerance bar + : 0.3
Rated speed rpm : 100 Del. quantity	+ Shuboff solenoid + Volt : 12
cm3/1000 strokes : 75.0 Tolerance cm3/1000 str. +-: 20.0	Rated speed rpm : 500
Shutoff solenoid Volt : 12	Supply pomp pressure bar : 4.3 Tolerance bar +: 0.3
	Shutoff solenoid Volt : 12
	Rated speed rpm : 550
INJECTION-PUMP TEST SPECIFICATIONS	Supply pomp pressure bar : 7.7
TIMING DEVICE CHARACTERISTIC	Tolerance bar +: 0.5 Shutoff solenoid Volt: 12
Rated speed rpm : 1800	KSB/AFB Volt : 12
SV travel mm : 3.9 Tolerance mm +-: 0.3	+ OVERFLOW QUANTITY
Check tolerance mm + : 0.7	Rated speed rpm : 500
Shutoff solenoid Volt : 12	Overflow quantity ccm/10s : 111.1 Tolerance
Rated speed rpm : 1200	ccm/10s +: 22.2
SV travel mm : 0.7 Tolerance mm +-: 0.3	Check tolerance + : 22.2
Check tolerance mm + : 0.7	Shutoff solenoid Volt : 12
Shutoff solenoid Volt : 12	Rated speed rpm : 2000 Overflow quantity
Rated speed rpm : 550	ccm/10s : 138.8  Tolerance
SV travel mm : 2.5 Tolerance mm + : 1.2	+ ccm/10s +: 55.5
Check tolerance mm + : 1.5	+ Check tolerance + ccm/10s +-: 55.5
Shutoff solenoid Volt : 12	+ Shutoff solenoid + Volt : 12
KSB/AFB Volt : 12	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 2000	Rated speed rpm : 2200 Del. quantity
SV travel mm : 4.5	cm3/1000 strokes : 30.0
Tolerance mm +: 0.3 Check tolerance mm +: 0.7	Tolerance cm3/1000 str. +-: 2.0 Check tolerance
Shutoff solenoid	- cm3/1000s. +-: 4.5
Volt : 12	+

Shutoff solenoid		+
Volt :	12	ELECTR. SHUTOFF
Rated speed rpm : Del. quantity	2150	CONTROL LEVER, IDLE STOP
cm3/1000 strokes : Tolerance	41.0	Rated speed rpm : 350 Del. quantity
cm3/1000 str. + : Check tolerance	4.0	cm3/1000 strokes : 1.5
cm3/1000s. +: Shutoff solenoid	6.0	- cm3/1000 str. + : 1.5 - Check tolerance
Volt :	12	cm3/1000s. + : 1.5
Rated speed rpm : Del. quantity	2350	FULL-LOAD STOP CONTROL LEVER
cm3/1000 strokes : Tolerance	1.5	Rated speed rpm : 350 Del. quantity
cm3/1000 str. +-: Check tolerance	1.5	cm3/1000 strokes : 1.5
cm3/1000s. +-: Shutoff solenoid	1.5	cm3/1000 str. + : 1.5 Check tolerance
Volt :	12	cm3/1000s. + : 1.5
Aneroid pressure hPa :		IDLE DELIVERY
LDA/		Rated speed rpm : 450 Del. quantity
HBA stroke mm :	9.0	cm3/1000 strokes : 1.5 Tolerance
Rated speed rpm : Del. quantity	2000	cm3/1000 str. +-: 1.5 Check tolerance
cm3/1000 strokes : Tolerance	47.0	cm3/1000s. + : 1.5 Shutoff solenoid
cm3/1000 str. + : Check tolerance	2.5	+ Volt : 12
cm3/1000s. +: Shutoff solenoid	3.5	Rated speed rpm : 325 Del. quantity
Volt :	12	cm3/1000 strokes : 24.0 Tolerance
Rated speed rpm : Del. quantity	1500	- cm3/1000 str. + : 5.0 - Check tolerance
cm3/1000 strokes : Tolerance	51.5	cm3/1000s. + : 6.0 Shutoff solenoid
cm3/1000 str. + : Check tolerance	2.5	+ Volt : 12
cm3/1000s. +: Shutoff solenoid	3.5	‡
Volt :	12	‡
Rated speed rpm : Del. quantity	500	+ START TRANSITION
cm3/1000 strokes : Tolerance	33.0	Rated speed rpm : 450
cm3/1000 str. +-: Check tolerance	0.5	Del. quantity cm3/1000 strokes : 25.0
cm3/1000s. +: Shutoff solenoid	3.5	Tolerance + cm3/1000 str. +-: 15.0
Volt :	12	Shutoff solenoid Volt : 12
		+

Rated speed rpm : 300

Del. quantity

cm3/1000 strokes : 75.0

Tolerance

cm3/1000 str. + : 20.0

Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 9.0

Dimension K mm : 3,5
Tolerance mm + : +0,1
Dimension KF mm : 8,4
Tolerance mm + : +0,2
Dimension MS mm : 1,5
Tolerance mm + : +0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 36,8..40,9

Control lever

position YB mm : 44,4..49,6

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 31.01.96 Test oil : ISO 4113

: 0 460 426 233 Part no. Pump designation: VE6/12F1100R579

Customer-spec. information

Customer : FNH-GEOTECH Motor : 7.5 L NA/DI

#### TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C 45 Tolerance °C +:

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35 Tolerance bar + :

Test nozzle holde

: 1 688 901 110 assembly

Opening pressure

bar 250 Tolerance bar + :

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 840

REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1.0 Tolerance mm +:+0.2Outlet : B

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 600

Setting mm 1.6 Tolerance mm + : 0.2 Shutoff solenoid Volt 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 600 amoa vjaau2

pressure bar 5.5 Tolerance bar +-: 0.2 Shutoff solenoid Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 66.5 Del. quantity cm3/1000 strokes : 69.5 Tolerance cm3/1000 str. +-: 0.5 Tolerance cm3/1000 str. + :0.5 Spread

cm3/1000 strokes : 5.0 Spread cm3/1000 strokes : 5.0 Shutoff solenoid Volt 12 Shutoff solenoid 12 Volt

5.0

IDLE SETTING

cm3/1000s.

Check tolerance

Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 15.0 Tolerance

cm3/1000 str. + : 0.5 Shutoff solenoid 12 Volt

Spread: 5.0 cm3/1000 strokes :

Check tolerance			ı		
cm3/1000s.	:	5.0	Ŧ	SUPPLY PUMP PRESSURI	E CHARACTERISTIC
			<u> </u>	Rated speed rpm : Supply pomp	1100
			1	pressure bar :	7.8
FULL-LOAD SPEED R	EGULA	NTION	1	Tolerance bar +-:	0.3
			+	Shutoff solenoid	• •
Rated speed rpm Del. quantity		1180	‡	Volt :	12
cm3/1000 strokes Tolerance	:	33.0	‡	Rated speed rpm : Supply pomp	475
cm3/1000 str. +-	. :	3.0	1	pressure bar :	4.9
Shutoff solenoid			+	Tolerance bar +:	0.3
Volt	:	12	+	Shutoff solenoid	- • •
			+	Volt :	12
STARTING FUEL DEL	IVERY	•	+		
Rated speed rpm	:	100	‡	OVERFLOW QUANTITY	
Del. quantity cm3/1000 strokes	:	85.0	‡	Rated speed rpm : Overflow quantity	1100
Tolerance cm3/1000 str. +-	. :	25.0	1	ccm/10s : Tolerance	138.8
Shutoff solenoid			+	ccm/10s +:	41.6
Volt	•	12	†		
			†	Check tolerance	
			†	ccm/10s +:	41.6
			†	Shutoff solenoid	40
			†	Volt :	12
INJECTION-PUMP TE	ST SP	PECIFICATIONS	_	Rated speed rpm :	475
TIMING DEVICE CHA	RACTE	RISTIC	Ŧ	Overflow quantity ccm/10s :	97.2
Rated speed rpm	:	750	‡	Tolerance ccm/10s +-:	22.2
CV Annual		2.7	†		
SV travel mm	•	2.3	†	Check tolerance	22.2
Tolerance mm +	•	0.4	†	ccm/10s +:	22.2
Check tolerance mm +		0.7	†	Shutoff solenoid	40
Shutoff solenoid	•	U. 1	Ť	Volt :	12
Volt	:	12	Ŧ	DELIVERY AND BREAKAV	NAY CHARACTERISTIC
Rated speed rpm	:	500	1	Rated speed rpm :	1180
Nated speed (pill	•	500	I	Del. quantity	1100
SV travel mm	•	1.2	I	cm3/1000 strokes :	33.0
Tolerance mm +		0.4	1	Tolerance .	33.6
Check	•	0.4	$\Gamma$	cm3/1000 str. +:	3.0
tolerance mm +	•	0.7	I	Check tolerance	5.0
Shutoff solenoid	•	0.1	1	cm3/1000s. +-:	8.0
Volt	:	12	1	Shutoff solenoid	0.0
	•	, 0	1	Volt :	12
Rated speed rpm	:	1100	1		16
and the second second second		-	1	Rated speed rpm :	1150
SV travel mm	:	2.5	1	Del. quantity	
Tolerance mm +-		0.4	1	cm3/1000 strokes :	50.5
roterance in -					
Check	•		+	Tolerance	
	:	0.7	Ī		5.0
Check	*	0.7	Ī	Tolerance cm3/1000 str. +-: Check tolerance	5.0
Check tolerance mm +	:	0.7 12	<del>-</del>	cm3/1000 str. +-:	5.0 5.0

Shutoff solenoid Volt	:	12	‡ <del></del>
Rated speed rpm Del. quantity	:	1260	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
cm3/1000 strokes Tolerance	:	1.5	Rated speed rpm : 375 Del. quantity
cm3/1000 str. +- Check tolerance	:	1.5	cm3/1000 strokes : 1.5
cm3/1000s. +- Shutoff solenoid	•	1.5	+ cm3/1000 str. + : 1.5 + Check tolerance
Volt	:	12	- cm3/1000s. + : 1.5
Aneroid pressure hPa	:		FULL-LOAD STOP CONTROL LEVER Rated speed rpm : 375
LDA/			+ Del. quantity
HBA stroke mm	:	5.0	+ cm3/1000 strokes : 1.5 + Tolerance
Rated speed rpm Del. quantity	:	1100	cm3/1000 str. +: 1.5
cm3/1000 strokes Tolerance	:	66.0	+ IDLE DELIVERY
cm3/1000 str. +- Check tolerance	:	2.0	+ Rated speed rpm : 460 + Del. quantity
cm3/1000s. +- Shutoff solenoid	:	3.5	cm3/1000 strokes : 1.5 Tolerance
Volt	:	12	- cm3/1000 str. +-: 1.5 - Check tolerance
Rated speed rpm Del. quantity	:	500	+ cm3/1000s. + : 1.5 + Shutoff solenoid
cm3/1000 strokes Tolerance	:	56.0	Volt : 12
cm3/1000 str. +- Check tolerance	:	6.0	‡
cm3/1000s. +- Shutoff solenoid	:	6.0	‡
Volt	:	12	+ START TRANSITION
Rated speed rpm Del. quantity	:	475	Rated speed rpm : 440
cm3/1000 strokes Tolerance		53.5	t Del. quantity cm3/1000 strokes : 60.0
cm3/1000 str. +- Check tolerance	•	3.0	Tolerance cm3/1000 str. +-: 15.0
cm3/1000s. +- Shutoff solenoid	:	5.0	+ Shutoff solenoid + Volt : 12
Volt	:	12	‡ 1
Rated speed rpm Del. quantity	:	800	Rated speed rpm : 250 Del. quantity
cm3/1000 strokes Tolerance	:	69.5	cm3/1000 strokes : 115.0 Tolerance
cm3/1000 str. +- Check tolerance	:	0.5	cm3/1000 str. +-: 25.0 Shutoff solenoid
cm3/1000s. +- Shutoff solenoid	:	3.0	+ Volt : 12
Volt	:	12	ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 5.0
Dimension K mm : 3,7
Tolerance mm + : +0,1
Dimension KF mm : 6,4
Tolerance mm + : +0,2
Dimension MS mm : 1,3
Tolerance mm + : +0,2

CONTROL LEVER POSITION SET

Control Lever

position YA mm : 32,8..34,8

Control Lever

position YB mm : 39,6..46,2

BOSCH INJ. PUMP TEST SPECIFICATIONS
Note remarks
Refer to Service Info for test and adjustment instructions. See microcard(s) W400/
Edition : 31.01.96 Test oil : ISO 4113
Part no. : 0 460 426 238  Pump designation : VE6/12F1100R579-1
Customer—spec. information Customer : FNH—GEOTECH Motor : 7.5 L TC
TEST BENCH REQUIREMENTS
Calibrating-oil return temperature °C : 45 Tolerance °C +-: 1
Overflow restriction mm : 0.75
<pre>Inlet press. bar : 0.35 Tolerance bar +-: 0.05</pre>
Test nozzle holde assembly : 1 688 901 110
Opening pressure bar : 250 Tolerance bar +-: 3
Test lines : 1 680 750 000
Outside diameter : 6.00
x inside diameter: 2.00 x length mm : 840

INJECTION PUMP SETTING VALUES
TIMING DEVICE TRAVEL
Rated speed rpm : 800
Setting mm : 1.2 Tolerance mm + : 0.2 Shutoff solenoid Volt : 12
SUPPLY PUMP PRESSURE
Rated speed rpm : 800 Supply pomp
pressure bar : 6.2 Tolerance bar +-: 0.2 Shutoff solenoid
Volt : 12
FULL-LOAD DELIV. WITHOUT BOOST PRESSURE
Rated speed rpm : 600 Rated speed rpm : 1050 Del. quantity
cm3/1000 strokes : 61.5
Del. quantity cm3/1000 strokes : 62.0
Tolerance cm3/1000 str. +-: 0.5
Tolerance cm3/1000 str. +-: 0.5
Spread cm3/1000 strokes : 5.0
Spread cm3/1000 strokes : 5.0 Shutoff solenoid
Volt : 12
Shutoff solenoid Volt : 12
Check tolerance cm3/1000s. : 5.0
IDLE SETTING
Rated speed rpm : 375
Del. quantity cm3/1000 strokes : 15.0 Tolerance
cm3/1000 str. + : 0.5
Shutoff solenoid Volt : 12
Spread cm3/1000 strokes : 5.0

Plunger stroke mm : 1,0 Tolerance mm + : +-0,2 Outlet : B

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Check tolerance cm3/1000s.	:	5.0	SUPPLY PUMP PRESSURE CHARACTERISTIC	:
			Rated speed rpm : 1100 Supply pomp	
			+ pressure bar : 7.5	
FULL-LOAD SPEED R	EGUL	ATION	+ Tolerance bar +-: 0.3 + Shutoff solenoid	
Rated speed rpm Del. quantity	:	1180	Volt : 12	
cm3/1000 strokes Tolerance			Rated speed rpm : 475 Supply pomp	
cm3/1000 str. +- Shutoff solenoid	:	3.0	pressure bar : 4.9 Tolerance bar +: 0.3	
Volt	:	12	+ Shutoff solenoid	
STARTING FUEL DEL	IVER	Υ	† Volt : 12	
			+ OVERFLOW QUANTITY	
Rated speed rpm Del. quantity	:	100	+ Rated speed rpm : 1100	
cm3/1000 strokes	:	95.0	+ Overflow quantity	
Tolerance cm3/1000 str. +		25.0	+ ccm/10s : 138.8 + Tolerance	
Shutoff solenoid Volt		12	ccm/10s +: 41.6	
VOCC	•	12	Check_tolerance	
			+ ccm/10s +: 41.6 + Shutoff solenoid	
			Volt : 12	
INJECTION-PUMP TE	ST S	DECTETCATT	ONS + Rated speed rpm : 475	
			+ Overflow quantity	
TIMING DEVICE CHA	RACT	ERISTIC	+ ccm/10s : 97.2 + Tolerance	
Rated speed rpm	:	900	ccm/10s +: 22.2	
SV travel mm	:	1.8	Check tolerance	
Tolerance mm +	:	0.4	+ ccm/10s + : 22.2	
Check tolerance mm +-	:	0.7	+ Shutoff solenoid + Volt : 12	
Shutoff solenoid Volt		12	DEL TUEDY AND EDEALANAY CHADACTED TOT	
	•		DELIVERY AND BREAKAWAY CHARACTERIST	10
Rated speed rpm	:	600	+ Rated speed rpm : 1180 + Del. quantity	
SV travel mm	:	0.4	+ cm3/1000 strokes : 33.0	
Tolerance mm +- Check	•	0.4	+ Tolerance	
tolerance mm +-	•		$+ cm3/1000 str + \cdot 30$	
Charles and an add		0.7	cm3/1000 str. +: 3.0 Check tolerance	
Shutoff solenoid Volt		0.7 12		
Volt	•	12	Check tolerance cm3/1000s. +: 8.0	
Volt Rated speed rpm	•	12 1100	Check tolerance cm3/1000s. +: 8.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1150	
Volt Rated speed rpm SV travel mm	•	12 1100 2.4	Check tolerance cm3/1000s. +: 8.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1150 Del. quantity	
Volt Rated speed rpm SV travel mm Tolerance mm + Check	:	12 1100 2.4 0.4	Check tolerance cm3/1000s. +: 8.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1150 Del. quantity cm3/1000 strokes : 50.5 Tolerance	
Volt Rated speed rpm SV travel mm Tolerance mm + Check tolerance mm +	:	12 1100 2.4	Check tolerance cm3/1000s. +: 8.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1150 Del. quantity cm3/1000 strokes : 50.5 Tolerance cm3/1000 str. +- : 5.0	
Volt Rated speed rpm SV travel mm Tolerance mm + Check	:	12 1100 2.4 0.4	Check tolerance cm3/1000s. +: 8.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1150 Del. quantity cm3/1000 strokes : 50.5 Tolerance	

Shutoff solenoid Volt :	12		outoff solenoid	•	12
Rated speed rpm :	1260	†			, -
Del. quantity cm3/1000 strokes : Tolerance	1.5	† – EL	ECTR. SHUTOFF		
cm3/1000 str. +- ; Check tolerance	1.5	‡ cc	NTROL LEVER, IDL	E STOP	
cm3/1000s. +-:	1.5		ted speed rom	: 37	5
Shutoff solenoid Volt :	12	† cn	3/1000 strokes Lerance	•	1.5
Rated speed rpm :	1100		3/1000 str. +-	•	1.5
Del. quantity cm3/1000 strokes :	59.5		3/1000s. +-	•	1.5
Tolerance cm3/1000 str. +:	2.0	+ 10	LE DELIVERY		
Check tolerance cm3/1000s. + :	3.5	† Ra	ted speed rpm	: 45	0
Shutoff solenoid Volt :	12	† De	l. quantity 3/1000 strokes		1.5
Rated speed rpm :	500		lerance 3/1000 str. +-		1.5
Del. quantity cm3/1000 strokes :	53.0		eck tolerance 3/1000s. +-	•	1.5
Tolerance cm3/1000 str. +:	6.0		utoff solenoid lt	•	12
Check tolerance cm3/1000s. + : Shutoff solenoid	6.0	‡			
Volt :	12	+			
Rated speed rpm : Del. quantity	800	Ŧ			
cm3/1000 strokes : Tolerance	67.5	†	ART TRANSITION		
cm3/1000 str. +-: Check tolerance	2.0	† De	l. quantity	: 35	
cm3/1000s. +: Shutoff solenoid	3.5	† To	3/1000 strokes lerance		0.0
Volt :	12	† sh	3/1000 str. +- utoff solenoid	: 1	5.0
Rated speed rpm : Del. quantity	475	† Vo	lt	:	12
cm3/1000 strokes : Tolerance	53.5			: 20	0
cm3/1000 str. +-: Check tolerance	3.0	† cm	l. quantity 3/1000 strokes	: 12	0.0
cm3/1000s. + : Shutoff solenoid	4.5	† cm	lerance 3/1000 str. +-	: 2	5.0
Volt :	12		utoff solenoid lt	:	12
Rated speed rpm : Del. quantity	1050	Ī -			
cm3/1000 strokes : Tolerance	62.0	+	SEMBLY AND ADJUS		IMENSIONS
cm3/1000 str. + : Check tolerance	0.5	† To	lerance mm +-	: 3,7 : +-0,1	
cm3/1000s. +-:	3.0	· · · · · · · · · · · · · · · · · · ·		: 6,4 : +-0,2	

Dimension MS mm : 1,4 Tolerance mm + : +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 39,7..46,3

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.04.95 : ISO 4113 Test oil

: 0 460 416 078 Part no. Pump designation: VE6/11F1150R586

Customer-spec. information : IVECO-FIAT Customer Motor : 8065.05.240 Power KW 83.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 55 Tolerance \*C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

bar 250 Tolerance bar +:

: 1 680 750 073 Test lines

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm 800 Setting mm 2.4 Tolerance mm + : 0.2

Shutoff solenoid

Volt 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm 800 Supply pomp

pressure bar 6.5 Tolerance bar ←: 0.3

Shutoff solenoid

Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 700 Del. quantity cm3/1000 strokes : 64.0 Tolerance cm3/1000 str. + :0.5 Spread cm3/1000 strokes : 3.5 Shutoff solenoid Volt 12

#### IDLE SETTING

Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 3.5 Check tolerance cm3/1000s.4.0

#### FULL-LOAD SPEED REGULATION

1250 Rated speed rpm : Del. quantity

cm3/1000 strokes : 25.0

Tolerance

cm3/1000 str. +:3.0

Shutoff solenoid

Volt 12

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity	+ Shutoff solenoid
cm3/1000 strokes : 100.0	+ Volt : 12
Tolerance	†
cm3/1000 str. +-: 30.0 Shutoff solenoid	Rated speed rpm : 500
Volt : 12	+ Overflow quantity + ccm/10s : 63.8
, 12	Tolerance . 65.8
	+ ccm/10s +-: 22.2
	+
	+ Check tolerance
THICATION DIND TECT OPPOSETOR TONG	+ ccm/10s +: 22.2
INJECTION-PUMP TEST SPECIFICATIONS	+ Shutoff solenoid
TIMING DEVICE CHARACTERISTIC	† Volt : 12
taining person diminiormatoria	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 700	+
	+ Rated speed rpm : 1250
SV travel mm : 1.4	+ Del. quantity
Tolerance mm + : 0.4 Check	+ cm3/1000 strokes : 25.9
tolerance mm + : 0.9	+ Tolerance + cm3/1000 str. + : 3.0
Shutoff solenoid	Check tolerance
Volt : 12	+ cm3/1000s. +-: 6.0
	+ Shutoff solenoid
Rated speed rpm : 1150	+ Volt : 12
51/ + may a 1 mm a 7 7	† D
SV travel mm : 3.3 Tolerance mm + : 0.4	Rated speed rpm : 1270
Check	Del. quantity cm3/1000 strokes : 16.0
tolerance mm +: 0.7	Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	+
	+ Rated speed rpm : 1350
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Del. quantity
Rated speed rpm : 1150	+ cm3/1000 strokes : 1.5 + Tolerance
Supply pomp	+ cm3/1000 str. + : 1.5
pressure bar : 8.0	Check tolerance
Tolerance bar +: 0.3	+ cm3/1000s. +: 1.5
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
Rated speed rpm : 500	Rated speed rpm : 1150
Supply pomp	+ Del. quantity
pressure bar : 5.0	+ cm3/1000 strokes : 58.0
Tolerance bar +: 0.3	+ Tolerance
Shutoff solenoid	+ cm3/1000 str. +: 1.5
Volt : 12	+ Check tolerance
OVEREI OLI OLIANITATY	+ cm3/1000s. +: 3.5
OVERFLOW QUANTITY	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 1150	. 12
Overflow quantity	+ Rated speed rpm : 500
ccm/10s : 97.2	+ Del. quantity
Tolerance	+ cm3/1000 strokes : 62.5
ccm/10s +-: 41.6	+ Tolerance
Shack tolerance	+ cm3/1000 str. + : 1.5
Check tolerance ccm/10s +: 41.6	+ Check tolerance + cm3/1000s. + : 3.5
	+ 01107 100000
	1

Shutoff salenoid Valt	:	12	
Rated speed rpm Del. quantity	:	700	
cm3/1000 strokes Tolerance	:	64.0	
cm3/1000 str. +- Check tolerance	:	0.5	
cm3/1000s. +- Shutoff solenoid	:	3.0	
Volt	:	12	
ELECTR. SHUTOFF CONTROL LEVER, IDE	.E	STOP	
Rated speed rpm Del. quantity	:	300	
cm3/1000 strokes Tolerance	:	1.5	
cm3/1000 str. +- Check tolerance	:	1.5	
cm3/1000s. +-	:	1.5	
Spread cm3/1000 strokes	:	5.0	
FULL-LOAD STOP CON	NTF	ROL LEVER	
Rated speed rpm Del. quantity	:	300	
cm3/1000 strokes Tolerance	:	1.5	
cm3/1000 str. +-	:	1.5	
cm3/1000 strokes	:	5.0	
Check tolerance cm3/1000s. +-	:	1.5	
Spread cm3/1000 strokes	:	5.0	
IDLE DELIVERY			
Rated speed rpm Del. quantity	:	400	
cm3/1000 strokes Tolerance	:	1.5	
cm3/1000 str. +- Check tolerance	:	1.5	
cm3/1000s. +- Shutoff solenoid	:	1.5	
Volt	:	12	

Rated speed rpm Del. quantity	:	250	
cm3/1000 strokes Tolerance	:	60.0	
cm3/1000 str. +- Shutoff sclenoid	:	15.0	
Volt	:	12	
Rated speed rpm	:	150	
Del. quantity cm3/1000 strokes	:	105.0	
Tolerance cm3/1000 str. +-	:	30.0	
Shutoff solenoid			
Volt			

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 5,4
Tolerance mm + : +0,2
Dimension MS mm : 1,2
Tolerance mm + : +0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 36,5..38,5

Control lever

position YB mm : 43,7..48,9

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 12.12.95 **Fdition** Test oil : ISO 4113

: 0 460 484 073 Part no. Pump designation : VE4/8F2050R588

Customer-spec. information : RENAULT Customer : F80 - 640 Motor Power KW 40.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance \*C +:

Overflow

restriction mm : 0.55

0.35 Inlet press. bar : Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

bar Tolerance bar + : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

## REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm 3.2 Tolerance mm 0.2 Shutoff solenoid Volt 12

#### SUPPLY PUMP PRESSURE

1500 Rated speed rpm :

Supply pomp

pressure bar 6.5 Tolerance bar + : 0.3 Shutoff solenoid

12 Volt

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes :

Tolerance

cm3/1000 str. +:0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt 12

#### HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 550 Del. quantity

cm3/1000 strokes : 3.0

Tolerance

cm3/1000 str. +-: 2.0 Shutoff solenoid

Volt 12

#### IDLE DELIVERY

Rated speed rpm 410

Del. quantity cm3/1000 strokes :

11.0 Tolerance cm3/1000 str. +-: 2.0

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

12 Volt

#### HIGH IDLE SETTING

Rated speed rpm 450

Del. quantity

cm3/1000 strokes : 9.0

Tolerance cm3/1000 str. +:	2.0	‡	SUPPLY PUMP PRESSURE CHARACTERISTIC	
Shutoff solenoid Volt	12	+		
vott ;	12	Ī	Rated speed rpm : 2000 Supply pomp	
FULL-LOAD SPEED REGUL	LATION	+	pressure bar : 8.0	
Dad dans town	2450	+	Tolerance bar +: 0.3	
Rated speed rpm : Del. quantity	2150	1	Shutoff solenoid Volt : 12	
cm3/1000 strokes :	27.5	Ţ	volt : 12	
Tolerance		+	Rated speed rpm : 500	
cm3/1000 str. +: Shutoff solenoid	3.0	1	Supply pomp pressure bar : 3.3	
Volt :	12	Į	Tolerance bar +: 0.3	
		+	Shutoff solenoid	
STARTING FUEL DELIVER	RY	İ	Volt : 12	
Rated speed rpm : Del. quantity	100	+	OVERFLOW QUANTITY	
cm3/1000 strokes :	55.0	I	Rated speed rpm : 2000	
Tolerance		+	Overflow quantity	
cm3/1000 str. +: Shutoff solenoid	15.0	†	ccm/10s : 97.2 Tolerance	
Volt :	12	Ŧ	ccm/10s +: 41.6	
		Ī	Check tolerance	
		+	ccm/10s + : 41.6	
		1	Shutoff solenoid Volt : 12	
INJECTION-PUMP TEST S	SPECIFICATIONS	Ŧ	Volt : 12	
TIMING DELITCE CHARACT	PPD T O T T O	+	Rated speed rpm : 500	
TIMING DEVICE CHARACT	IEKTZIIC	1	Overflow quantity ccm/10s : 63.8	
Rated speed rpm :	2000	+	Tolerance	
SV travel mm :	5.4	†	ccm/10s +-: 22.2	
Tolerance mm +:	0.4	Ŧ	Check tolerance	
Check	4.7	+	ccm/10s +: 22.2	
tolerance mm +: Shutoff solenoid	0.7	İ	Shutoff solenoid Volt : 12	
Volt :	12	+	. 12	
Rated speed rpm :	1000	+	DELIVERY AND BREAKAWAY CHARACTERISTIC	
Rated speed rpm :	1000	I	Rated speed rpm : 2150	
SV travel mm :	1.0	+	Del. quantity	
Tolerance mm + : Check	0.4	İ	cm3/1900 strokes : 27.5 Tolerance	
tolerance mm +:	0.7	+	cm3/1000 str. +: 3.0	
Shutoff solenoid	40	+	Check tolerance	
Volt :	12	1	cm3/1000S. +-: 4.0 Shutoff solenoid	
Rated speed rpm :	1250	ł	Volt : 12	
SV travel mm :	2.1	+	Rated speed rpm : 2250	
Tolerance mm +:	0.4	†	Del. quantity	
Check tolerance mm +:	0.7	Ī	cm3/1000 strokes : 16.0 Check tolerance	
Shutoff solenoid		+	cm3/1000s. +: 5.0	
Volt :	12	İ	Shutoff solenoid Volt : 12	
		T	Volt : 12	
Δ27				

		1
Rated speed rpm :	2550	Ţ
Del. quantity	2.5	
cm3/1000 strokes : Tolerance	2.5	+ ELECTR. SHUTOFF + CONTROL LEVER, IDLE STOP
cm3/1000 str. +:	2.5	+ CONTROL LEVER, IDLE STOP
Check tolerance		Rated speed rpm : 410
cm3/1000s. +-: Shutoff solenoid	2.5	+ Del. quantity
Volt :	12	t cm3/1000 strokes : 1.5 Tolerance
•	_	cm3/1000 str. +: 1.5
Rated speed rpm :	2000	+ Check tolerance
Del. quantity cm3/1000 strokes :	31.0	+ cm3/1000s. + : 1.5 + Spread
Tolerance	51.6	cm3/1000 strokes : 5.0
cm3/1000 str. +:	1.0	+
Check tolerance cm3/1000s. +-:	2.3	FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid	2.5	Rated speed rpm : 410
Volt :	12	+ Del. quantity
Rated speed rpm :	750	+ cm3/1000 strokes : 1.5
Rated speed rpm : Del. quantity	750	+ Tolerance + cm3/1000 str. +-: 1.5
cm3/1000 strokes :	34.0	Spread
Tolerance	4 5	+ cm3/1000 strokes : 5.0
cm3/1000 str. + : Check tolerance	1.5	+ Check tolerance + cm3/1000s. +-: 1.5
cm3/1000s. +-:	2.3	Spread
Shutoff solenoid	4 m	+ cm3/1000 strokes : 5.0
Volt :	12	İ
		T .
Rated speed rpm :	1625	<del> </del>
Del. quantity		<del> </del>
Del. quantity cm3/1000 strokes :	1625 31.9	
Del. quantity		† † † †
Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance	31.9 1.5	START TRANSITION
Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-:	31.9	÷
Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance	31.9 1.5	Rated speed rpm : 310
Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid Volt :	31.9 1.5 2.3	Rated speed rpm : 310 Del. quantity cm3/1000 strokes : 30.0
Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance cm3/1000s. +- : Shutoff solenoid Volt : Rated speed rpm :	31.9 1.5 2.3	Rated speed rpm : 310  Del. quantity  cm3/1000 strokes : 30.0  Tolerance
Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt: Rated speed rpm: Del. quantity	31.9 1.5 2.3	Rated speed rpm : 310  Del. quantity  cm3/1000 strokes : 30.0  Tolerance  cm3/1000 str. + : 15.0
Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance	31.9 1.5 2.3 12 500 33.0	Rated speed rpm : 310  Del. quantity  cm3/1000 strokes : 30.0  Tolerance
Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-:	31.9 1.5 2.3 12 500	Rated speed rpm : 310  Del. quantity  cm3/1000 strokes : 30.0  Tolerance  cm3/1000 str. + : 15.0  Shutoff solenoid
Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance	31.9 1.5 2.3 12 500 33.0	Rated speed rpm : 310  Del. quantity  cm3/1000 strokes : 30.0  Tolerance  cm3/1000 str. + : 15.0  Shutoff solenoid  Volt : 12
Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid	31.9 1.5 2.3 12 500 33.0 1.5 2.3	Rated speed rpm : 310  Del. quantity  cm3/1000 strokes : 30.0  Tolerance  cm3/1000 str. + : 15.0  Shutoff solenoid
Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-:	31.9 1.5 2.3 12 500 33.0	Rated speed rpm : 310  Del. quantity  cm3/1000 strokes : 30.0  Tolerance  cm3/1000 str. + : 15.0  Shutoff solenoid  Volt : 12  Rated speed rpm : 210  Del. quantity  cm3/1000 strokes : 60.0
Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:	31.9 1.5 2.3 12 500 33.0 1.5 2.3	Rated speed rpm : 310  Del. quantity  cm3/1000 strokes : 30.0  Tolerance  cm3/1000 str. + : 15.0  Shutoff solenoid  Volt : 12  Rated speed rpm : 210  Del. quantity  cm3/1000 strokes : 60.0  Tolerance
Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid	31.9 1.5 2.3 12 500 33.0 1.5 2.3 12	Rated speed rpm : 310  Del. quantity cm3/1000 strokes : 30.0  Tolerance cm3/1000 str. + : 15.0  Shutoff solenoid Volt : 12  Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 60.0  Tolerance cm3/1000 str. + : 15.0  Shutoff solenoid
Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes:	31.9 1.5 2.3 12 500 33.0 1.5 2.3	Rated speed rpm : 310  Del. quantity  cm3/1000 strokes : 30.0  Tolerance  cm3/1000 str. + : 15.0  Shutoff solenoid  Volt : 12  Rated speed rpm : 210  Del. quantity  cm3/1000 strokes : 60.0  Tolerance  cm3/1000 str. + : 15.0
Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000s strokes: Tolerance	31.9 1.5 2.3 12 500 33.0 1.5 2.3 12 1250 33.5	Rated speed rpm : 310  Del. quantity cm3/1000 strokes : 30.0  Tolerance cm3/1000 str. + : 15.0  Shutoff solenoid Volt : 12  Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 60.0  Tolerance cm3/1000 str. + : 15.0  Shutoff solenoid
Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes:	31.9 1.5 2.3 12 500 33.0 1.5 2.3 12	Rated speed rpm : 310  Del. quantity cm3/1000 strokes : 30.0  Tolerance cm3/1000 str. + : 15.0  Shutoff solenoid Volt : 12  Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 60.0  Tolerance cm3/1000 str. + : 15.0  Shutoff solenoid
Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000s. +-: Check tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes:	31.9 1.5 2.3 12 500 33.0 1.5 2.3 12 1250 33.5	Rated speed rpm : 310  Del. quantity cm3/1000 strokes : 30.0  Tolerance cm3/1000 str. + : 15.0  Shutoff solenoid Volt : 12  Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 60.0  Tolerance cm3/1000 str. + : 15.0  Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS
Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 str. +-: Check tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes:	31.9 1.5 2.3 12 500 33.0 1.5 2.3 12 1250 33.5 0.5	Rated speed rpm : 310  Del. quantity cm3/1000 strokes : 30.0  Tolerance cm3/1000 str. + : 15.0  Shutoff solenoid Volt : 12  Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 60.0  Tolerance cm3/1000 str. + : 15.0  Shutoff solenoid Volt : 12

Dimension KF mm : 5,4
Tolerance mm + : +0,2
Dimension MS mm : 1,3
Tolerance mm + : +0,2

CONTROL LEVER POSITION SET

Control lever position YA mm : -

Control lever position YB mm : -

#### BOSCH INJ. PORP FERF SPECIFECATIONS

#### NUTE TEMPTER

Refer to Service Info for test and edjustment instructions.
See adonueard(s) W4836...

Edition : 12.12.95 Test oil : ISO 4113

Part no. : 0 460 484 086 Pump designation : VE4/8F2050R588-1

Customer—spec. information
Customer : RENAULT
Motor : F8Q - 640
Power KW : 47.0

#### TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

#### REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting me : 3.2
Tolerance me : 0.2
Shutoff set
Volt : 12

#### SUPPLY PUMP FRESSURE

Rated speed rpm : 1500
Supply pomp
pressure bar : 6.5
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	33.5
Tolerance		
cm3/1000 str. +-	:	0.5
Spread		2.5
cm3/1000 strokes Shutoff solenoid	:	2.5
Volt	:	12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 str. +-: 2.0
Shutoff solenoid
Volt : 12

#### IDLE DELIVERY

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 11.0
Tolerance
cm3/1000 str. + : 2.0
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

## HIGH IDLE SETTING

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 9.0

Tolerance +	
cm3/1000 str. +: 2.0 Shutoff solenoid	SUPPLY PUMP PRESSURE CHARACTERISTIC
Volt : 12	- Rated speed rpm : 2000 - Supply pomp
FULL-LOAD SPEED REGULATION	- pressure bar : 8.0 - Tolerance bar +-: 0.3
Rated speed rpm : 2150  Del. quantity	- Shutoff solenoid - Volt : 12
cm3/1000 strokes : 27.5 Tolerance	Rated speed rpm : 500
cm3/1000 str. + : 3.0 Shuroff solenoid	- Supply pomp - pressure bar : 3.3
Volt : 12	Tolerance bar + : 0.3 Shutoff solenoid
STARTING FUEL DELIVERY	- Volt : 12
Rated speed rpm: 100	- OVERFLOW QUANTITY
cm3/1000 strokes : 55.0 Tolerance	- Rated speed rpm : 2000 - Overflow quantity
cm3/1000 str. +: 15.0 Shutoff solenoid	- ccm/10s : 97.2 - Tolerance
Volt : 12	- ccm/10s + : 41.6
+	Check tolerance ccm/10s +: 41.6
TALLEGERAL	- Shutoff solenoid - Volt : 12
INJECTION-PUMP TEST SPECIFICATIONS	- - Rated speed rpm : 500
TIMING DEVICE CHARACTERISTIC	- Rated speed rpm : 500 - Overflow quantity - ccm/10s : 63.8
Rated speed rpm : 2000	- Tolerance
SV travel mm : 5.4	- ccm/10s + : 22.2
Tolerance mm +: 0.4 Check	- Check tolerance - ccm/10s +-: 22.2
tolerance mm +: 0.7 Shutoff solenoid	- Shutoff solenoid
Volt : 12	- Volt : 12
Rated speed rpm : 1000	DELIVERY AND BREAKAWAY CHARACTERISTIC
SV travel mm : 1.0	- Rated speed rpm : 2150 - Del. quantity
Tolerance mm + : 0.4 Check	- cm3/1000 strokes : 27.5 - Tolerance
tolerance mm +: 0.7 Shutoff solenoid	- cm3/1000 str. +-: 3.0 - Check tolerance
Volt : 12	there role; and
1	-  cm3/1000s. + : 4.0
Rated speed rpm : 1250	
SV travel mm : 2.1	- cm3/1000s. +-: 4.0 - Shutoff solenoid - Volt : 12 - Rated speed rpm : 2250
SV travel mm : 2.1 Tolerance mm +: 0.4 Check	cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12
SV travel mm : 2.1 Tolerance mm +: 0.4	cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2250 Del. quantity
SV travel mm : 2.1 Tolerance mm +: 0.4 Check tolerance mm +: 0.7	cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 16.0 Check tolerance

		•
Rated speed rpm :	2550	<b>‡</b>
Del. quantity		
cm3/1000 strokes : Tolerance	2.5	+ ELECTR. SHUTOFF
cm3/1000 str. +:	2.5	CONTROL LEVER, IDLE STOP
Check tolerance	£.5	Rated speed rpm : 410
cm3/1000s. + :	2.5	+ Del. quantity
Shutoff solenoid	•	+ cm3/1000 strokes : 1.5
Volt :	12	+ Tolerance
Rated speed rpm :	2000	+ cm3/1000 str. +: 1.5
Del. quantity	4000	+ Check tolerance + cm3/1000s. ++: 1.5
cm3/1000 strokes :	31.0	+ Spread
Tolerance cm3/1000 str. + :	4.0	+ cm3/1000 strokes : 5.0
Check tolerance	1.0	
cm3/1000s. + :	2.3	+ FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid		Rated speed rpm : 410
Volt :	12	+ Del. quantity
Rated speed rpm :	750	+ cm3/1000 strokes : 1.5
Del. quantity	750	Tolerance
cm3/1000 strokes :	34.0	
Tolerance		+ cm3/1000 strokes : 5.0
cm3/1000 str. +:	1.5	Check tolerance
Check tolerance cm3/1000s. +-:	2.3	+ cm3/1000s. +: 1.5
Shutoff solenoid	2.3	+ Spread - cm3/1000 strokes : 5.0
Volt :	12	- cm3/1000 strokes : 5.0
Omborit	4.400	+
Rated speed rpm : Del. quantity	1625	+
cm3/1000 strokes :	31.9	†
Tolerance	31.7	Ī
cm3/1000 str. +:	1.5	<del> </del>
Check tolerance	2.7	+ START TRANSITION
cm3/1000s. +-: Shutoff solenoid	2.3	†
Volt :	12	Rated speed rpm : 310
	17	
	12	+ Del. quantity + cm3/1000 strokes : 30 0
Rated speed rpm :		cm3/1000 strokes : 30.0 Tolerance
Rated speed rpm : Del. quantity	500	cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. +- : 15.0
Rated speed rpm : Del. quantity cm3/1000 strokes :		cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. +-: 15.0 Shutoff solenoid
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + :	500	cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. +- : 15.0
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance	500 33.0 1.5	cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. +-: 15.0 Shutoff solenoid
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	500 33.0	cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  Rated speed rpm : 210
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid	500 33.0 1.5 2.3	cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  Rated speed rpm : 210 Del. quantity
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	500 33.0 1.5	cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 60.0
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt : Rated speed rpm :	500 33.0 1.5 2.3	cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 60.0 Tolerance
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt : Rated speed rpm : Del. quantity	500 33.0 1.5 2.3 12	cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes :	500 33.0 1.5 2.3	cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt : Rated speed rpm : Del. quantity	500 33.0 1.5 2.3 12 1250 33.5	cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid
Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance	500 33.0 1.5 2.3 12	cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12
Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	500 33.0 1.5 2.3 12 1250 33.5	cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid
Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance	500 33.0 1.5 2.3 12 1250 33.5 0.5	cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12

Dimension KF mm : 5,4
Tolerance mm + : +-0,2
Dimension MS mm : 1,3
Tolerance mm + : +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 16,0..20,0

Control lever

position YB mm : 65,9..77,7

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.01.96 Test oil : ISO 4113

Part no. : 0 460 404 081 Pump designation : VE4/10F2100R589

Customer-spec. information

Customer : IVECO-SOFIM 8140.67.2550

Power KW : 56.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0.2Tolerance mm + : 0.02

Check

tolerance mm + : 0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200

Setting mm : 2.1
Tolerance mm + : 0.1
Shutoff solenoid

Snutoff solenoid Volt :

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200

Supply pomp

pressure bar : 6.1 Tolerance bar + : 0.3

Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm : 1200

Del. quantity

cm3/1000 strokes : 42.0

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

IDLE SETTING

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 str. + : 2.0

Shutoff solenoid

Volt : 12

Spread

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s. : 2.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400

Del. quantity

cm3/1000 strokes : 16.0

B06

Tolerance	+ Check
cm3/1000 str. +: 2.0	tolerance mm +: 0.7
Shutoff solenoid	- Shutoff solenoid
Volt : 12	Volt : 12
, ,	. 12
STARTING FUEL DELIVERY	2400
STARTING FUEL DELIVERT	Rated speed rpm : 2100
Data Lawrente a 400	<b>_</b> .
Rated speed rpm : 100	SV travel mm : 7.4
Del. quantity	Tolerance mm + : 0.4
cm3/1000 strokes : 90.0	Check
Tolerance -	tolerance mm +: 0.7
cm3/1000 str. + : 20.0	Shutoff solenoid
Shutoff solenoid	Volt : 12
Volt : 12 -	
	Rated speed rpm : 1600
	1 Racea opeca (piii : 1000
_	SV travel mm : 4.8
LOAD-DEPENDENT START OF DELIVERY	Tolerance mm + : 0.3
SETTING -	+ Check
251171/0	
NELTHERY ATERCHAE	tolerance mm +: 0.7
DELIVERY DIFFERENCE -	Shutoff solenoid
	† Volt : 12
Rated speed rpm : 1200 -	<del>†</del>
Del. quantity -	SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 strokes : -14.0	+
Tolerance -	Rated speed rpm : 2100
cm3/1000 str. +-: 1.0	Supply pomp
Shutoff solenoid -	pressure bar : 8.6
Volt : 12 -	Tolerance bar +: 0.3
	- Shutoff solenoid
PRESSURE DIFFERENCE -	Volt : 12
- HEODGINE PELLENGE	r vocc
•	+
Rated speed rpm : 1200	Rated speed rpm : 600
Rated speed rpm : 1200 - Del. quantity -	Rated speed rpm : 600 Supply pomp
Rated speed rpm : 1200 - Del. quantity - cm3/1000 strokes : -0.2	Rated speed rpm : 600 Supply pomp pressure bar : 4.2
Rated speed rpm : 1200 - Del. quantity - cm3/1000 strokes : -0.2 - Tolerance	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar + : 0.3
Rated speed rpm : 1200  Del. quantity - cm3/1000 strokes : -0.2  Tolerance - cm3/1000 str. + : 0.1	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid
Rated speed rpm : 1200  Del. quantity - cm3/1000 strokes : -0.2  Tolerance - cm3/1000 str. + : 0.1  Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar + : 0.3
Rated speed rpm : 1200  Del. quantity - cm3/1000 strokes : -0.2  Tolerance - cm3/1000 str. + : 0.1	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12
Rated speed rpm : 1200  Del. quantity : cm3/1000 strokes : -0.2  Tolerance : cm3/1000 str. + : 0.1  Shutoff solenoid : 12	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid
Rated speed rpm : 1200  Del. quantity - cm3/1000 strokes : -0.2  Tolerance - cm3/1000 str. + : 0.1  Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12
Rated speed rpm : 1200  Del. quantity : cm3/1000 strokes : -0.2  Tolerance : cm3/1000 str. + : 0.1  Shutoff solenoid : 12	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY
Rated speed rpm : 1200  Del. quantity : cm3/1000 strokes : -0.2  Tolerance : cm3/1000 str. + : 0.1  Shutoff solenoid : 12	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100
Rated speed rpm : 1200  Del. quantity : -0.2  Tolerance : -0.1  Shutoff solenoid Volt : 12  TIMING-DEVICE TRÂVEL DIFFERENCE : -0.2  Rated speed rpm : 1200  Del. quantity	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity
Rated speed rpm : 1200  Del. quantity : -0.2  Tolerance : -0.1  Shutoff solenoid Volt : 12  TIMING-DEVICE TRÂVEL DIFFERENCE : -0.2  Rated speed rpm : 1200  Del. quantity	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2
Rated speed rpm : 1200  Del. quantity : -0.2  Tolerance : -0.1  Shutoff solenoid  Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE : -  Rated speed rpm : 1200  Del. quantity : -0.8	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.8  Tolerance	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6  Check tolerance
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 41.6
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 41.6 Shutoff solenoid
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid  Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.8  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid  Volt : 12	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 41.6
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 41.6 Shutoff solenoid Volt : 12
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid  Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.8  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid  Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 600
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid  Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.8  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid  Volt : 12	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid  Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.8  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid  Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.2	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.2	Rated speed rpm : 600 Supply pomp pressure bar : 4.2 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2

Shutoff solenoid Volt :	12	Shutoff solenoid Volt : 12
DELIVERY AND BREAKAW	AY CHARACTERISTIC	Rated speed rpm : 1200 Del. quantity
Rated speed rpm : Del. quantity	2400	cm3/1000 strokes : 42.0 Tolerance
cm3/1000 strokes : Tolerance	16.0	cm3/1000 str. + : 0.5 Check tolerance
cm3/1000 str. +-: Check tolerance	2.0	cm3/1000s. +-: 2.0 Shutoff solenoid
cm3/1000s. +-: Shutoff solenoid	6.0	Volt : 12
Volt :	12	
Rated speed rpm : Del. quantity	+	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
cm3/1000 strokes : Tolerance	32.0 5.0	Rated speed rpm : 400
cm3/1600 str. +-: Shutoff solenoid Volt :	12	Del. quantity cm3/1000 strokes : 1.5 Tolerance
Rated speed rpm :	+	cm3/1000 str. + : 1.5 Check tolerance
Del. quantity cm3/1000 strokes :	1.5	cm3/1000s. +-: 1.5 Spread
Tolerance cm3/1000 str. +-:	1.5	cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. +-:	1.5	FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid Volt :	12	Rated speed rpm : 400 Del. quantity
Rated speed rpm : Del. quantity	2100	<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5</pre>
cm3/1000 strokes : Tolerance	40.0	Spread cm3/1000 strokes : 5.0
cm3/1000 str. +-: Check tolerance	1.5	Check tolerance cm3/1000s. +-: 1.5
cm3/1000s. +-: Shutoff solenoid	2.5	Spread cm3/1000 strokes : 5.0
Volt :	12	IDLE DELIVERY
Rated speed rpm : Del. quantity	+	Rated speed rpm : 490
cm3/1000 strokes : Tolerance	1.5	Del. quantity cm3/1000 strokes : 1.5
<pre>cm3/1000 str. +-: Check tolerance cm3/1000s. +-:</pre>	2.5	Tolerance cm3/1000 str. +-: 1.5 Check tolerance
Shutoff solenoid Volt	12	cm3/1000s. +: 1.5 Shutoff solenoid
Rated speed rpm :	+	Volt : 12
Del. quantity cm3/1000 strokes :	37.5	
Tolerance cm3/1000 str. +-:	2.0	CUENCIANO LOGO DEPOSITORIO
Check tolerance cm3/1000s. +-:	3.0	CHECKING LOAD-DEPENDENT START OF DELIVERY

# DELIVERY DIFFERENCE

Rated speed rpm	:	1200
Del. quantity cm3/1000 strokes		-18.0
Tolerance	•	-10.0
cm3/1000 str. $+$	:	3.0
Check tolerance		
cm3/1000s. +	:	4.0
Shutoff solenoid		
Volt	:	12

# TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm Del. quantity	:	1200
cm3/1000 strokes	:	-0.8
Tolerance cm3/1000 str. +-	:	0.1
Check tolerance cm3/1000s. +	:	0.1
Shutoff solenoid Volt	:	12

## DELIVERY DIFFERENCE

Rated speed rpm	:	1200
Del. quantity cm3/1000 strokes		1 5
Tolerance	:	1.5
cm3/1000 str. +	:	1.5
Check tolerance	-	
cm3/1000s. +	:	1.5
Shutoff solenoid		40
Volt	:	12

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	•	1200
Tolerance mm +	:	0.4
Check		
tolerance mm +	•	0.4
Shutoff solenoid		
Volt	•	12

# EXHAUST-GAS RECIRCULATION

Rated speed rpm Del. quantity	:	1200
cm3/1000 strokes	:	20.0
Tolerance		
cm3/1000 str. +-	•	0.5
Check tolerance		
cm3/1000s. +-	:	2.5
Shutoff solenoid	•	-
Volt		12
VOCC	•	16

# START TRANSITION

Rated speed rpm Del. quantity	:	500
cm3/1000 strokes	:	35.0
Tolerance cm3/1000 str. +- Shutoff solenoid	:	10.0
Volt	:	12

Rated speed rpm Del. quantity	:	300
cm3/1000 strokes Tolerance	:	70.0
cm3/1000 str. + Shutoff solenoid	:	15.0
Volt	:	12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm	:	_
Dimension KF mm	:	5,8
Tolerance mm +	:	+-0,2
Dimension MS mm	:	1,8
Tolerance mm +	:	+-0,2
KSB travel mm	:	10,0
TLA travel mm	:	9,0

# MICROSWITCH SET

mm	:	0,8	.3,0

# CONTROL LEVER POSITION SET

Control	lever		
position	YA mm	:	42,844,8

Control	lever		
position	YB mm	: 60,869	,2

BOSCH INJ. PUMP TES	ST SPECIFICATIONS			
Note remarks				
Refer to Service Ir adjustment instruct See microcard(s) W	ions.			
	27.03.95 ISO 4113			
Part no. Pump designation	0 460 404 082 VE4/10F2050R591			
Customer—spec. information Customer : IVECO—SOFIM Motor : 8140.67.2560 Power KW : 56.0				
TEST BENCH REQUIREM	IENTS			
Calibrating—oil return temperature °C : Tolerance °C + :	45 1			
Overflow restriction mm :	0.55			
Inlet press. bar : Tolerance bar + :	0.35 0.05			
Test nozzle holde assembly :	1 688 901 022			
Opening pressure bar : Tolerance bar + :	130 3			
Test lines :	1 680 750 073			
Outside diameter :	6.00			
x inside diameter : x length mm :	2.00 450			
REMARKS				

(as of UT) mm : 0,2Tolerance mm +: 0.02Check tolerance mm + : 0.04INJECTION PUMP SETTING VALUES TIMING DEVICE TRAVEL Rated speed rpm : 1200 Setting mm 2.2 Tolerance mm + : 0.1 Shutoff solenoid Volt 12 SUPPLY PUMP PRESSURE Rated speed rpm : 1200 Supply pomp pressure bar 6.3 Tolerance bar +-: 0.3 Shutoff solenoid 12 Volt FULL-LOAD DELIV. WITHOUT BOOST PRESSURE Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : 42.5 Tolerance cm3/1000 str. +-: 0.5 Spread cm3/1000 strokes : 2.5 Shutoff solenoid 12 Volt IDLE SETTING Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. + :2.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 2.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300

Prestroke

BEGINNING OF DELIVERY

Del. quantity	+ .	Tolerance mm + :	0.3
cm3/1000 strokes : 25.0 Tolerance	†	Check	0.7
$cm3/1000 str. \leftarrow : 2.0$	Ţ	tolerance mm + : Shutoff solenoid	0.7
Shutoff solenoid Volt : 12	+	Volt :	12
vott : 12	1	Rated speed rpm :	2100
STARTING FUEL DELIVERY	+	,	-
Rated speed rpm : 100	<u>†</u>	SV travel mm : Tolerance mm +-:	
Del. quantity	I	Check	U.4
cm3/1000 strokes : 90.0	+	tolerance mm + :	0.7
Tolerance cm3/1000 str. +-: 20.0	1	Shutoff solenoid Volt :	12
Shutoff solenoid	+		
Volt : 12	‡	Rated speed rpm :	1600
	+	SV travel mm :	4.9
LOAD-DEPENDENT START OF DELIV	/EDY	Tolerance mm + : Check	0.4
SETTING	1	tolerance mm +-:	0.7
	+	Shutoff solenoid	
DELIVERY DIFFERENCE	1	Volt :	12
Rated speed rpm : 1200	1	SUPPLY PUMP PRESSUR	E CHARACTERISTIC
Del. quantity cm3/1000 strokes : -14.0	Ī	Rated speed rpm :	2100
Tolerance	<del> </del>	Supply pomp	2100
cm3/1000 str. + : 1.0	+	pressure bar :	8.8
Shutoff salenaid Volt : 12	Ī	Tolerance bar +-: Shutoff solenoid	0.3
	+	Volt :	12
PRESSURE DIFFERENCE	+	Data dama ad ann	400
Rated speed rpm : 1200	I	Rated speed rpm : Supply pomp	600
Del. quantity	+	pressure bar :	4.4
cm3/1000 strokes : -0.2 Tolerance	İ	Tolerance bar + : Shutoff solenoid	0.3
cm3/1000 str. + : 0.1	1	Volt :	12
Shutoff solenoid	+	ALIES EL 611 ALIAN ETT.	
Volt : 12	İ	OVERFLOW QUANTITY	
TIMING-DEVICE TRAVEL DIFFEREN	VCE +	Rated speed rpm :	2100
Rated speed rpm : 1200	İ	Overflow quantity ccm/10s :	97.2
Del. quantity	+	Tolerance	71.6
cm3/1000 strokes : -0.8 Tolerance	‡	ccm/10s +-:	41.6
cm3/1000 str. + : 0.1	+	Check tolerance	
Shutoff solenoid Volt : 12	†	ccm/10s +: Shutoff solenoid	41.6
vott . 12	Į	Volt :	12
INJECTION-PUMP TEST SPECIFICA	ATTONS	Dated speed	400
TIANECITOIA-LALIE LEST SEETLICE	1110//9	Rated speed rpm : Overflow quantity	600
TIMING DEVICE CHARACTERISTIC	<u>†</u>	ccm/10s :	63.8
Rated speed rpm : 1800	Ŧ	ccm/10s +:	22.2
SV travel mm : 6.3	Ţ		

Check tolerance ccm/10s + : 22.2	+ Check tolerance + cm3/1000s. + : 3.0 + Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	+ Rated speed rpm : 1200
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ Del. quantity + cm3/1000 strokes : 42.5
Rated speed rpm : 2300 Del. quantity	+ Tolerance + cm3/1000 str. +-: 0.5
cm3/1000 strokes : 25.0 Tolerance	Check tolerance cm3/1000s. +: 2.0
cm3/1000 str. + : 2.0 Check tolerance	Shutoff solenoid Volt : 12
cm3/1000s. +: 6.0 Shutoff solenoid	
Volt : 12	ELECTR CHITOEE
Rated speed rpm : 2400 Del. quantity	+ ELECTR. SHUTOFF
cm3/1000 strokes : 10.0 Shutoff solenoid	Rated speed rpm : 375 Del. quantity
Volt : 12	+ cm3/1000 strokes : 1.5 + Tolerance
Rated speed rpm : 2600 Del. quantity	cm3/1000 str. +: 1.5 Check tolerance
cm3/1000 strokes : 1.5 Tolerance	+ cm3/1000s. +-: 1.5 + Spread
cm3/1000 str. + : 1.5 Check tolerance	cm3/1000 strokes : 5.0
cm3/1000s. +: 1.5 Shutoff solenoid	FULL-LOAD STOP CONTROL LEVER
Volt : 12	Rated speed rpm : 375
Rated speed rpm : 2100 Del. quantity	+ Del. quantity + cm3/1000 strokes : 1.5 + Tolerance
cm3/1000 strokes : 40.5 Tolerance	+ cm3/1000 str. $+$ : 1.5
cm3/1000 str. +-: 1.5	Spread cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. +-: 2.5	+ Check tolerance + cm3/1600s. + : 1.5
Shutoff solenoid Volt : 12	+ Spread + cm3/1000 strokes : 5.0
Rated speed rpm : 1500	IDLE DELIVERY
Del. quantity cm3/1000 strokes : 42.0 Tolerance	Rated speed rpm : 465
cm3/1000 str. +-: 1.5	Del. quantity cm3/1000 strokes : 1.5
Check tolerance cm3/1000s. +: 2.5	+ Tolerance + cm3/1000 str. ←: 1.5
Shutoff solenoid Volt : 12	the Check tolerance cm3/1000s. +: 1.5
Rated speed rpm : 600	+ Shutoff solenoid + Volt : 12
Del. quantity cm3/1000 strokes : 38.0	‡
Tolerance cm3/1000 str. +-: 2.0	‡
	†

		+ Shutoff solenoid
CHECKING LOAD-DEPENDE	nir	+ Volt : 12
START OF DELIVERY	EN (	START TRANSITION
DELIVERY DIFFERENCE		Rated speed rpm : 500 Del. quantity
Rated speed rpm : Del. quantity	1200	cm3/1000 strokes : 35.0
cm3/1000 strokes : Tolerance	-18.0	cm3/1000 str. +: 10.0  Shutoff solenoid
cm3/1000 str. + :	3.0	Volt : 12
m3/1000s. +-:	4.0	Rated speed rpm : 300
olt:	12	Del. quantity  - cm3/1000 strokes : 70.0
TIMING-DEVICE TRAVEL	DIFFERENCE	Tolerance + cm3/1000 str. + : 15.0
ated speed rpm : el. quantity	1200	Shutoff solenoid Volt : 12
m3/1000 strokes :	-0.8	. 12
cm3/1000 str. + :	0.1	ASSEMBLY AND ADJUSTMENT DIMENSION
m3/1000s. +:	0.1	Dimension K mm : - Dimension KF mm : 5,8
olt :	12	Tolerance mm +: +-0,2 Dimension MS mm : 1,8
ELIVERY DIFFERENCE		Tolerance mm → : +0,2 + KSB travel mm : 10,0
ated speed rpm : el. quantity	1200	TLA travel mm : 9,0
3/1000 strokes :	1.5	# MICROSWITCH
3/1000 str. + : eck tolerance	1.5	SET
3/1000s. +:	1.5	mm : 0,83,0
it :	12	CONTROL LEVER POSITION SET
IMING-DEVICE TRAVEL	DIFFERENCE	1
ated speed rpm : blerance mm + : neck	1200 0.4	Control lever position YA mm : 42,944,9
olerance mm +: nutoff solenoid	0.4	Control lever position YB mm : 36,044,0
olt :	12	position YB mm : 36,044,0
XHAUST-GAS RECIRCULA	TION	
Pated speed rpm :	1200	+ End of test-specification sheet
cm3/1000 strokes : Tolerance	31.5	<u>†</u>
m3/1000 str. +-: Theck tolerance	0.5	<u> </u>
:m3/1000s. +-:	2.5	<b>‡</b>

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.10.94 Test oil : ISO 4113

Part no. : 0 460 494 368 Fump designation : VE4/9F2200R603

Customer-spec. information

Customer : VW

Motor : 1,9 L UD MVEG 2

Power KW : 55.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar : 147 Tolerance bar +-: 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

#### **REMARKS**

## BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,8
Tolerance mm + : +0,02
Outlet : A

## INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250 Aneroid pressure

nPa : 750

Setting mm : 5.5
Tolerance mm + : 0.2
Shutoff solenoid

Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 750
Supply pomp
pressure bar : 5.8
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 1250 Aneroid pressure hPa 750 Del. quantity cm3/1000 strokes : 46.5 Tolerance cm3/1000 str. + :0.5 Spread cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 3.0 Shutoff solenoid Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance

cm3/1000s. : 3.0

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550 Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 str. + : 0.5

Shut Volt	off solenoid	: 12	‡	Tolerance mm +- Check	: 0.4
IDLE	DELIVERY		‡	tolerance mm +- Shutoff solenoid	: 0.8
Rate	d speed rpm	: 450	<u>†</u>	Volt	: 12
Del.	quantity 1000 strokes		1	Rated speed rpm Aneroid pressure	: 750
Tole	rance		Ŧ	hPa	: 750
Spre			‡	SV travel mm	: 3.4
	1000 strokes off solenoid	: 2.0	‡	Tolerance mm +- Check	: 0.4
Volt		: 12	<u> </u>	tolerance mm +- Shutoff solenoid	: 0.8
HIGH	IDLE SETTING		1	Volt	: 12
	d speed rpm quantity	: 550	1	Rated speed rpm Ameroid pressure	: 2000
cm3/	1000 strokes	: 18.0	+	hPa	: 750
cm3/	1000 str. +	: 1.0	Ŧ	SV travel mm	: 0.8
Volt	off solenoid	: 12	Ţ	Tolerance mm +- Shutoff solenoid	
FULL	-LOAD SPEED RE	EGULATION	‡	Volt	: 12
	d speed rpm	: 2525	‡	Timing device solenoid Volt	: 100
	sure hPa quantity	: 750	† +	SUPPLY PUMP PRESSU	JRE CHARACTERISTIC
	1000 strokes rance	: 20.0	‡	Rated speed rpm	: 2000
cm3/	1000 str. + off solenoid	: 2.0	Ì	Aneroid pressure	: 750
Volt		: 12	1	Supply pomp	: 8.0
OFT /	CDANUATED CTA	DITHO DELIVERY	Ŧ	pressure bar Tolerance bar +	
	ROL LEVER, IDL	RTING DELIVERY LE STOP	‡	Shutoff solenoid Volt	: 12
	d speed rpm	: 100	+	Rated speed rpm	: 750
cm3/	quantity 1000 strokes	: 43.0	‡	Aneroid pressure hPa	<i>:</i> 750
cm3/	rance 1000 str. +	: 3.0	‡	Supply pomp pressure bar	: 4.3
Shut: Volt	off solenoid	: 12	‡	Tolerance bar + Shutoff solenoid	
			‡	Volt	: 12
-			‡	OVERFLOW QUANTITY	
INJE	CTION-PUMP TES	ST SPECIFICATIONS	‡	Rated speed rpm Aneroid pressure	: 1250
TIMIT	NG DEVICE CHAR	RACTERISTIC	1	hPa Overflow quantity	: 750
	d speed rpm oid pressure	: 2000	1	ccm/10s Tolerance	: 77.7
hPa	ora pressure	: 750	Ŧ	ccm/10s +	: 22.2
SV ti	ravel mm	: 8.6	1		

Charle tallarens			el. quantity	44.5
Check tolerance	34.7		m3/1000 strokes	: 46.2
ccm/10s +	54.7		olerance	4.6
Shutoff solenoid	: 12		cm3/1000 str. +	: 1.0
Volt	. 12	•	Check tolerance	2.2
Datad anned was	: 2100		cm3/1000s. +	: 2.2
Rated speed rpm	. 2100	1	Shutoff solenoid	. 43
Aneroid pressure hPa	: 750	† v	/olt	: 12
Overflow quantity		Ť,	lated annual	. /50
ccm/10s	: 97.2			: 450
Tolerance	. 71.6		Del. quantity cm3/1000 strokes	: 44.7
ccm/10s +	: 41.6	•	olerance	* ***. (
CCIII 105	. 41.0	1	m3/1000 str. +-	: 3.0
Check tolerance			Check tolerance	3.0
ccm/10s +	: 55.5		m3/1000s. +	: 5.5
Shutoff solenoid	. 23.3		Shutoff solenoid	, 3,5
Volt	: 12		olt	: 12
80.66	• , _	I	000	• ; 4
DELIVERY AND BREA	KAWAY CHARAC	TERISTIC + R	ated speed rpm	: 1250
			neroid pressure	. 1250
Rated speed rpm	: 2525		iPa	: 750
Aneroid pressure			el. quantity	
hPa	: 750		m3/1000 strokes	: 46.5
Del. quantity		<del> </del> T	olerance	
cm3/1000 strokes	: 20.0	+ c	m3/1000 str. +	: 0.5
Tolerance			heck tolerance	
cm3/1000 str. +	: 2.0		m3/1000s. $+-$	: 2.2
Check tolerance			hutoff soleroid	
cm3/1000s. +	: 4.0	+ v	/olt	: 12
Shutoff solenoid	40	† _		
Volt	: 12			: 700
Data dana ada wan	. 2/00		neroid pressure	400
Rated speed rpm	: 2400	,	Pa	: 180
Aneroid pressure hPa	: 750	,	olerance m3/1000 str. +	: 0.5
Del. quantity	. 100		heck tolerance	: 0.5
cm3/1000 strokes	: 34.5		m3/1000s. +-	: 0.5
Tolerance	. 54.5		heck tolerance	. 0.5
cm3/1000 str. +	: 5.0		m3/1000s. +-	: 0.5
Check tolerance			hutoff solenoid	. 0.5
cm3/1000s. +-	: 6.0		olt	: 12
Shutoff solenoid		+		
Volt	: 12	+ R	ated speed rpm	: 700
			neroid pressure	
Rated speed rpm	: 2750		Pa	: 300
Aneroid pressure			el. quantity	
hPa	: 750	*	m3/1000 strokes	: 6.0
Del. quantity	4.5		olerance	
cm3/1000 strokes	: 1.5		m3/1000 str. +-	: 1.0
Tolerance	. 4.5		heck tolerance	4.0
cm3/1000 str. +-	: 1.5		m3/1000s. +- hutoff solenoid	: 1.0
Check tolerance	: 1.5			. 13
cm3/1000s. +- Shutoff solenoid	. 1.3	† V	olt	: 12
Volt	: 12	Ī		
VOLL	. 12	Ι -		
Rated speed rpm	: 2100	IF	LECTR. SHUTOFF	
Aneroid pressure	. 2.00	,	ONTROL LEVER, IDL	F STOP
hPa	: 750	1		- 0191
		1		

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 str. +-: 1.5
Check tolerance
cm3/1000s. +-: 1.5

#### START TRANSITION

Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 41.0 Colerance cm3/1000 str. +: 10.0 Shutoff solenoid Volt 12 Rated speed rpm : 180 Del. quantity cm3/1000 strokes : 45.0

cm3/1000 strokes : 45.0 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm + : +0,1
Dimension KF mm : 6,0
Tolerance mm + : +0,2
Dimension MS mm : 1,2
Tolerance mm + : +0,2

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.05.95 Test oil : ISO 4113

Part no. : 0 460 494 413 Pump designation : VE4/9F2200R603-1

Customer-spec. information

Customer : VW

Motor : 1,9 \( \text{UD MVEG 2} \)

Power KW : 55.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar : 147
Tolerance bar + : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure
hPa : 750

Setting mm : 5.5
Tolerance mm +: 0.2
Shutoff solenoid

Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 750
Supply pomp
pressure bar : 5.8
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

1250 Rated speed rpm : Aneroid pressure hPa 750 Del. quantity cm3/1000 strokes : 46.5 Tolerance cm3/1000 str. +-: 0.5 Spread cm3/1000 strokes : Check tolerance cm3/1000s. 3.0 Shutoff solenoid

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Check tolerance

Volt

cm3/1000s. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550

Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 str. +: 0.5 Shutoff solenoid Volt : 12

IDLE DELIVERY

Rated speed rpm : 450

Del. quantity

cm3/1000 strokes : 22.0

Tolerance	† Aneroid pressure
cm3/1000 str. +-: 1.0	† hPa : 750
Spread	+
cm3/1000 strokes : 2.0	+ SV travel mm : 3.4
Shutoff solenoid	+ Tolerance mm +-: 0.4
Volt : 12	+ Check
	tolerance mm + : 0.8
HIGH IDLE SETTING	+ Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 550	
Del. quantity	Rated speed rpm : 2000
cm3/1000 strokes : 18.0	Aneroid pressure
Tolerance	the hPa : 750
cm3/1000 str. +-: 1.0	7 IIIa : 750
Shutoff solenoid	T SV Americal and
	+ SV travel mm : 0.8
Volt : 12	Tolerance mm +: 0.4
Pill I AAA ARMA ARMA ARMA	+ Shutoff solenoid
FULL-LOAD SPEED REGULATION	+ Volt : 12
	<b>†</b>
Rated speed rpm : 2525	+ Timing device
Pressure hPa : 750	+ solenoid Volt : 100
Del. quantity	+
cm3/1000 strokes : 20.0	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
Tolerance	+
cm3/1000 str. +-: 2.0	+ Rated speed rpm : 2000
Shutoff solenoid	+ Aneroid pressure
Volt : 12	+ hPa : 750
	+ Supply pomp
	+ pressure bar : 8.0
SET GRADUATED STARTING DELIVERY	+ Tolerance bar + : 0.3
CONTROL LEVER, IDLE STOP	+ Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 100	
Del. quentity	Rated speed rpm : 750
cm3/1000 strokes : 43.0	- Aneroid pressure
Tolerance	hPa : 750
cm3/1000 str. + : 3.0	
Shutoff solenoid	+ Supply pomp + pressure bar : 4.3
Volt : 12	
. 12	+ Tolerance bar +-: 0.3
. 12	Tolerance bar +-: 0.3 Shutoff solenoid
. 12	+ Tolerance bar +-: 0.3
. 12	Tolerance bar +-: 0.3 Shutoff solenoid Volt: 12
	Tolerance bar +-: 0.3 Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	Tolerance bar +-: 0.3 Shutoff solenoid Volt: 12 OVERFLOW QUANTITY
INJECTION-PUMP TEST SPECIFICATIONS	Tolerance bar + : 0.3 Shutoff solenoid Volt : 12 OVERFLOW QUANTITY Rated speed rpm : 1250
	Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure
INJECTION-PUMP TEST SPECIFICATIONS TIMING DEVICE CHARACTERISTIC	Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750
INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000	Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity
INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure	Tolerance bar +-: 0.3 Shutoff solenoid Volt: 12  OVERFLOW QUANTITY  Rated speed rpm: 1250 Aneroid pressure hPa: 750 Overflow quantity ccm/10s: 77.7
INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000	Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity ccm/10s : 77.7 Tolerance
INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000  Aneroid pressure hPa : 750	Tolerance bar +-: 0.3 Shutoff solenoid Volt: 12  OVERFLOW QUANTITY  Rated speed rpm: 1250 Aneroid pressure hPa: 750 Overflow quantity ccm/10s: 77.7
INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 750  SV travel mm : 8.6	Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity ccm/10s : 77.7 Tolerance ccm/10s + : 22.2
INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 750  SV travel mm : 8.6 Tolerance mm + : 0.4	Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity ccm/10s : 77.7 Tolerance ccm/10s + : 22.2  Check tolerance
INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 750  SV travel mm : 8.6 Tolerance mm +: 0.4 Check	Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity ccm/10s : 77.7 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 34.7
INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 750  SV travel mm : 8.6 Tolerance mm + : 0.4 Check tolerance mm + : 0.8	Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity ccm/10s : 77.7 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 34.7 Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 750  SV travel mm : 8.6 Tolerance mm + : 0.4 Check tolerance mm + : 0.8 Shutoff solenoid	Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity ccm/10s : 77.7 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 34.7
INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 750  SV travel mm : 8.6 Tolerance mm + : 0.4 Check tolerance mm + : 0.8	Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity ccm/10s : 77.7 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12
INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 750  SV travel mm : 8.6 Tolerance mm + : 0.4 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12	Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity ccm/10s : 77.7 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 34.7 Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 750  SV travel mm : 8.6 Tolerance mm + : 0.4 Check tolerance mm + : 0.8 Shutoff solenoid	Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity ccm/10s : 77.7 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12
INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 750  SV travel mm : 8.6 Tolerance mm + : 0.4 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12	Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity ccm/10s : 77.7 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2100

Overflow quantity	+ Rated speed rpm : 450
ccm/10s : 97.2	+ Del. quantity
Tolerance	+ cm3/1000 strokes : 44.7
ccm/10s + : 41.6	+ Tolerance
	+ cm3/1000 str. $+$ : 3.0
Check tolerance	+ Check tolerance
ccm/10s +: 55.5	+ cm3/1000s. $+$ : 5.5
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
	+
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ Rated speed rpm : 1250
	+ Aneroid pressure
Rated speed rpm : 2525	+ hPa : 750
Aneroid pressure	+ Del. quantity
hPa : 750	+ cm3/1000 strokes : 46.5
Del. quantity	+ Tolerance
cm3/1000 strokes : 20.0	+  cm3/1000  str. + : 0.5
Tolerance	+ Check tolerance
cm3/1000 str. + : 2.0	+  cm3/1000s. + : 2.2
Check tolerance	+ Shutoff solenoid
cm3/1000s. +-: 4.0	+ Volt : 12
Shutoff solenoid	+
Volt : 12	+ Rated speed rpm : 700
	+ Aneroid pressure
Rated speed rpm : 2400	+ hPa : 180
Aneroid pressure	Tolerance
hPa : 750	+  cm3/1000  str. + : 0.5
Del. quantity	+ Check tolerance
cm3/1000 strokes : 34.5	+  cm3/1000s. + + : 0.5
Tolerance	- Check tolerance
cm3/1000 str. + : 5.0	+  cm3/1000s. + : 0.5
Check tolerance	+ Shutoff solenoid
cm3/1000s, + : 6.0	+ Volt : 12
Shutoff solenoid	1
Volt : 12	Rated speed rpm : 700
	+ Aneroid pressure
Rated speed rpm : 2750	+ hPa : 300
Aneroid pressure	+ Del. quantity
hPa : 750	+ cm3/1000 strokes : 6.0
Del. quantity	Tolerance
cm3/1000 strokes : 1.5	+ cm3/1000 str. +: 1.0
Tolerance	+ Check tolerance
cm3/1000 str. + : 1.5	+ cm3/1000s. + : 1.0
Check tolerance	+ Shutoff solenoid
cm3/1000s. +-: 1.5	+ Volt : 12
Shutoff solenoid	+
Volt : 12	+
Rated speed rpm : 2100	+ ELECTR. SHUTOFF
Aneroid pressure	+ CONTROL LEVER, IDLE STOP
hPa : 750	+
Del. quantity	+ Rated speed rpm : 450
cm3/1000 strokes : 46.2	+ Del. quantity
Tolerance	+ cm3/1000 strokes : 1.5
cm3/1000 str. + : 1.0	+ Tolerance
Check tolerance	+ cm3/1000 str. +-: 1.5
cm3/1000s. +-: 2.2	+ Check tolerance
Shutoff solenoid	+ cm3/1000s. + : 1.5
Volt : 12	Spread
	+ cm3/1000 strokes : 5.0

#### FULL-LOAD STOP CONTROL LEVER

Rated speed rpm	:	450
Del. quantity		4 5
cm3/1000 strokes Tolerance	•	1.5
cm3/1000 str. +		1.5
Spread	•	1.5
cm3/1000 strokes	:	5.0
Check tolerance		
cm3/1000s. +	:	1.5
Spread		
cm3/1000 strokes	:	5.0

#### START TRANSITION

Rated speed rpm Del. quantity	:	380
cm3/1000 strokes	•	41.0
cm3/1000 str. + Shutoff solenoid	:	10.0
Volt	:	12
Rated speed rpm	:	180
Del. quantity cm3/1000 strokes	:	180 45.0
Del. quantity	•	

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm + : +0,1
Dimension KF mm : 6,0
Tolerance mm + : +0,2
Dimension MS mm : 1,2
Tolerance mm + : +0,2

CONTROL LEVER POSITION SET

Control lever position YA mm : 36,0..40,0

Control lever position YB mm : 48,6..58,4

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.06.95 Test oil : ISO 4113

: 0 460 494 416 Part no. Pump designation: VE4/9F2200R604-1

Customer-spec. information

Customer

: 1,9 L UD MVEG 2 Motor

Power KW 55.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance \*C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-:

Test nozzle holde

: 1 688 901 111 assembly

Opening pressure

147 Tolerance bar + :

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250 Aneroid pressure hPa 750 Setting mm 5.5 Tolerance mm +-: 0.2 Shutoff solenoid Volt 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250 Aneroid pressure hPa 750 amoa vjaans pressure bar 5.8 Tolerance bar + : 0.3 Shutoff solenoid Volt 12

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250 Aneroid pressure hPa 750 Del. quantity cm3/1000 strokes : 46.5 Tolerance cm3/1000 str. + : 0.5 Spread cm3/1000 strokes : Check tolerance cm3/1000s. 3.0 Shutoff solenoid

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Check tolerance

Volt

cm3/1000s. : 3.0

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. +-: 0.5 Shutoff solenoid Volt 12

# IDLE DELIVERY

Rated speed rpm : 450 Del. quantity

cm3/1000 strokes : 22.0

Tolerance		Anonaid process
cm3/1000 str. +-: Spread	1.0	+ Aneroid pressure + hPa : 750
cm3/1000 strokes : Shutoff solenoid	2.0	SV travel mm : 3.4 Tolerance mm +-: 0.4
Volt :	12	+ Check + tolerance mm + : 0.8
HIGH IDLE SETTING		Shutoff solenoid Volt : 12
Rated speed rpm : 5 Del. quantity	500	Rated speed rpm : 2000
cm3/1000 strokes : Tolerance	18.0	+ Aneroid pressure + hPa : 750
cm3/1000 str. +-: Shutoff solenoid	1.0	SV travel mm : 0.8
Volt :	12	Tolerance mm +: 0.4  Shutoff solenoid
FULL-LOAD SPEED REGULATI	ON	Volt : 12
Rated speed rpm : 25	25	Timing device
Pressure hPa : Del. quantity	750	solenoid Volt : 100
	20.0	SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 str. +-: Shutoff solenoid	2.0	Rated speed rpm : 2000 Aneroid pressure
Volt :	12 .	hPa : 750 Supply pomp
		+ pressure bar : 8.0
SET GRADUATED STARTING D CONTROL LEVER, IDLE STOP		Tolerance bar + : 0.3 Shutoff solenoid
Rated speed rpm : 1	. 00	+ Volt : 12
Del. quantity	43.0	Rated speed rpm : 750 Aneroid pressure
Tolerance		+ hPa : 750
cm3/1000 str. + : Shutoff solenoid	3.0	+ Supply pomp + pressure bar : 4.3
Volt :	12	Tolerance bar + : 0.3 Shutoff solenoid
	<u>-</u>	Volt : 12
		. 12
INJECTION-PUMP TEST SPEC	TETCATTONS -	OVERFLOW QUANTITY
INJECTION-PUMP TEST SPEC	•	OVERFLOW QUANTITY Rated speed rpm : 1250
TIMING DEVICE CHARACTERI	STIC -	OVERFLOW QUANTITY  Rated speed rpm : 1250  Aneroid pressure hPa : 750
TIMING DEVICE CHARACTERI Rated speed rpm : 20 Aneroid pressure	STIC -	OVERFLOW QUANTITY  Rated speed rpm : 1250  Aneroid pressure  hPa : 750  Overflow quantity ccm/10s : 77.7
TIMING DEVICE CHARACTERI Rated speed rpm : 20 Aneroid pressure hPa :	STIC - 00 - 750 -	OVERFLOW QUANTITY  Rated speed rpm : 1250  Aneroid pressure  hPa : 750  Overflow quantity
TIMING DEVICE CHARACTERI Rated speed rpm : 20 Aneroid pressure hPa :  SV travel mm : Tolerance mm +-:	STIC -	OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity ccm/10s : 77.7 Tolerance ccm/10s +: 22.2  Check tolerance
TIMING DEVICE CHARACTERI  Rated speed rpm : 20 Aneroid pressure hPa :  SV travel mm : Tolerance mm + : Check tolerance mm + :	STIC - 00 - 750 - 8.6	OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity ccm/10s : 77.7 Tolerance ccm/10s +: 22.2  Check tolerance ccm/10s +: 34.7 Shutoff solenoid
TIMING DEVICE CHARACTERI  Rated speed rpm : 20 Aneroid pressure hPa :  SV travel mm : Tolerance mm + : Check	STIC	OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity ccm/10s : 77.7 Tolerance ccm/10s +: 22.2  Check tolerance ccm/10s +: 34.7 Shutoff solenoid Volt : 12
TIMING DEVICE CHARACTERI  Rated speed rpm : 20 Aneroid pressure hPa :  SV travel mm : Tolerance mm + : Check tolerance mm + : Shutoff solenoid Volt :	STIC	OVERFLOW QUANTITY  Rated speed rpm : 1250 Aneroid pressure hPa : 750 Overflow quantity ccm/10s : 77.7 Tolerance ccm/10s +: 22.2  Check tolerance ccm/10s +: 34.7 Shutoff solenoid

Overflow quantity ccm/10s : 97.2	+ Rated speed rpm : 450 + Del. quantity
Tolerance ccm/10s +-: 41.6	cm3/1000 strokes : 44.7
Check tolerance	cm3/1000 str. + : 3.0 Check tolerance
ccm/10s +-: 55.5 Shutoff solenoid	+ cm3/1000s. +-: 5.5  Shutoff solenoid
Volt : 12	Volt : 12
DELIVERY AND BREAKAWAY CHARACTERISTI	C Rated speed rpm : 1250 Aneroid pressure
Rated speed rpm : 2525 Aneroid pressure	hPa : 750  Del. quantity
hPa : 750 Del. quantity	cm3/1000 strokes : 46.5
cm3/1000 strokes : 20.0 Tolerance	cm3/1000 str. +: 0.5 Check tolerance
cm3/1000 str. + : 2.0 Check tolerance	+ cm3/1000s. + : 2.2 + Shutoff solenoid
cm3/1000s. + : 4.0 Shutoff solenoid	Volt : 12
Volt : 12	Rated speed rpm : 700 Aneroid pressure
Rated speed rpm : 2400 Aneroid pressure	hPa : 180 Tolerance
hPa : 750 Del. quantity	cm3/1000 str. + : 0.5 Check tolerance
cm3/1000 strokes : 34.5 Tolerance	cm3/1000s. +: 0.5 Check tolerance
cm3/1000 str. +: 5.0 Check tolerance	+ cm3/1000s. +: 0.5 + Shutoff solenoid
cm3/1000s. +: 6.0 Shutoff solenoid	Volt : 12
Volt : 12	Rated speed rpm : 700 Aneroid pressure
Rated speed rpm : 2750 Aneroid pressure	hPa : 300 + Del. quantity
hPa : 750 Del. quantity	cm3/1000 strokes : 6.0 Tolerance
cm3/1000 strokes : 1.5 Tolerance	cm3/1000 str. +: 1.0 Check tolerance
cm3/1000 str. +: 1.5 Check tolerance	cm3/1000s. + : 1.0 Shutoff solenoid
cm3/1000s. +: 1.5 Shutoff solenoid	Volt : 12
Volt : 12	
Rated speed rpm : 2100 Aneroid pressure	+ ELECTR. SHUTOFF + CONTROL LEVER, IDLE STOP
hPa : 750 Del. quantity	Rated speed rpm : 450
cm3/1000 strokes : 46.2 Tolerance	Del. quantity cm3/1000 strokes : 1.5
cm3/1000 str. + : 1.0 Check tolerance	Tolerance - cm3/1000 str. +-: 1.5
cm3/1000s. + : 2.2 Shutoff solenoid	+ Check tolerance + cm3/1000s. +-: 1.5
Volt : 12	+ Spread + cm3/1000 strokes : 5.0

## FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 str. + : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000s. + : 1.5
Spread

5.0

#### START TRANSITION

cm3/1000 strokes :

Rated speed rpm : 380
Del. quantity
cm3/1000 strokes : 41.0
Tolerance
cm3/1000 str. + : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 180
Del. quantity
cm3/1000 strokes : 45.0
Tolerance
cm3/1000 str. +: 10.0
Shutoff solenoid
Volt : 12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm + : +0,1
Dimension KF mm : 6,0
Tolerance mm + : +0,2
Dimension MS mm : 1,2
Tolerance mm + : +0,2

## MICROSWITCH SET

mm : 0,8...3,0 : ARF 12,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 36,0..40,0

Control lever

position YB mm : 48,6..58,4

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.01.96 Test oil : ISO 4113

Part no. : 0 460 426 243 Pump designation : VE6/12F1100R620

Customer-spec. information Customer : CASE Motor : 6T 590

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250
Tolerance bar + : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

# BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0.3Tolerance mm +-: +-0.02

Check

tolerance mm +:+0.04

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 750

Setting mm : 2.6
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 750 Supply pomp

pressure bar : 5.7 Tolerance bar + : 0.3

Shutoff solenoid Volt :

Rated speed rpm :

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

24

900

Del. quantity
cm3/1000 strokes : 61.0
Tolerance
cm3/1000 str. +-: 0.5
Spread

cm3/1000 strokes : 4.0 Shutoff solenoid

Volt : 24

#### IDLE SETTING

Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 20.0 Tolerance cm3/1000 str. + : 3.5 Shutoff solenoid Volt 24 Spread cm3/1000 strokes : 9.0 Check tolerance cm3/1000s. 9.0

#### FULL-LOAD SPEED REGULATION

Rated speed rpm : 1140 Del. quantity

cm3/1000 strokes : 60.0

Tolerance	+
cm3/1000 str. +: 3.0	Rated speed rpm : 500
Shutoff solenoid Volt : 24	+ Overflow quantity + ccm/10s : 63.8
Volt : 24	+ ccm/10s : 63.8 + Tolerance
STARTING FUEL DELIVERY	+ ccm/10s + : 22.2
OLUMINA LOFF REFLACIO	. 22.2
Rated speed rpm : 100	Check tolerance
Del. quantity	+ ccm/10s +: 22.2
cm3/1000 strokes : 85.0	+ Shutoff solenoid
Tolerance	+ Volt : 24
cm3/1000 str. +: 30.0	†
Shutoff solenoid	DELIVERY AND BREAKAWAY CHARACTERISTIC
Volt : 24	Detect energy was a 4446
	+ Rated speed rpm : 1140 + Del. quantity
	- cm3/1000 strokes : 60.0
	Tolerance
	+ cm3/1000 str. +: 3.0
INJECTION-PUMP TEST SPECIFICATIONS	+ Check tolerance
	+ cm3/1000s. $+$ : 6.0
TIMING DEVICE CHARACTERISTIC	+ Shutoff solenoid
	+ Volt : 24
Rated speed rpm : 1000	<b>†</b>
MILL Assessed to the Control of the	Rated speed rpm : 1175
SV travel mm : 4.4	+ Del. quantity
Tolerance mm + : 0.4 Check	+ cm3/1000 strokes : 30.0 + Check tolerance
tolerance mm + : 0.7	+ cm3/1000s. + : 15.0
Shutoff solenoid	+ Shutoff solenoid
Volt : 24	+ Volt : 24
SUPPLY PUMP PRESSURE CHARACTERISTIC	Rated speed rpm : 1240
	+ Del. quantity
Rated speed rpm : 1000	+ cm3/1000 strokes : 1.5
Supply pomp	Tolerance
pressure bar : 6.7	+ cm3/1000 str. +-: 1.5
Tolerance bar + : 0.3 Shutoff solenoid	+ Check tolerance + cm3/1000S. +-: 1.5
Volt : 24	+ cm3/1000S. +: 1.5 + Shutoff solenoid
. 24	+ Volt : 24
Rated speed rpm : 500	1
Supply pomp	Rated speed rpm : 1100
pressure bar : 4.7	- Del. quantity
Tolerance bar +-: 0.3	+ cm3/1000 strokes : 61.0
Shutoff solenoid	Tolerance
Volt : 24	+ cm3/1000 str. +: 1.5
OUTOTI OLI OLIANTTITY	+ Check tolerance
OVERFLOW QUANTITY	+ cm3/1000s. +: 3.0 + Shutoff solenoid
Rated speed rpm : 1100	+ Volt : 24
Overflow quantity	1 1000
ccm/10s : 83.3	Rated speed rpm : 750
Tolerance	+ Del. quantity
ccm/10s +: 27.7	+ cm3/1000 strokes : 58.0
	+ Tolerance
Check tolerance	+ cm3/1000 str. +-: 2.0
ccm/10s +: 27.7	+ Check tolerance
Shutoff solenoid	+ cm3/1000s. + : 4.0
Volt : 24	†

Shutoff solenoid		+ Del. quantity
Volt	: 24	+ cm3/1000 strokes : 7.0 + Tolerance
Rated speed rpm Del. quantity	: 500	cm3/1000 str. +-: 3.5
cm3/1000 strokes Tolerance	: 35.0	1
cm3/1000 str. +- Check tolerance	: 6.0	İ
cm3/1000s. +- Shutoff solenoid		START TRANSITION
Volt	: 24	Rated speed rpm : 250
Rated speed rpm Del. quantity	: 900	Del. quantity  cm3/1000 strokes : 78.0
cm3/1000 strokes Tolerance	: 61.0	Tolerance + cm3/1000 str. +-: 15.0
cm3/1000 str. +- Check tolerance	: 0.5	+ Shutoff solenoid
cm3/1000s. +- Shutoff solenoid	: 3.0	+ Volt : 24
Volt	: 24	Rated speed rpm : 150
		t Del. quantity cm3/1000 strokes : 100.0
ELECTR. SHUTOFF	E OTOD	Tolerance cm3/1000 str. +: 30.0
CONTROL LEVER, IDE		+ Shutoff solenoid + Volt : 24
Rated speed rpm	: 500	+
Del. quantity		
cm3/1000 strokes Tolerance		ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes Tolerance cm3/1000 str. +-		Dimension KF mm : 5,2
cm3/1000 strokes Tolerance	: 1.5	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,36
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 1.5 : 1.5	Dimension KF mm : 5,2 Tolerance mm + : +-0,2
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- FULL-LOAD STOP CON	: 1.5 : 1.5 VTROL LEVER	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,36 Tolerance mm + : +0,15/-0,1
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- FULL-LOAD STOP COM Rated speed rpm Del. quantity cm3/1000 strokes	: 1.5 : 1.5 VTROL LEVER : 500	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,36
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- FULL-LOAD STOP COM Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 1.5 : 1.5 VTROL LEVER : 500 : 1.5	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,36 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION SET
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- FULL-LOAD STOP COM Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 1.5 : 1.5 NTROL LEVER : 500 : 1.5 : 1.5	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,36 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- FULL-LOAD STOP COM Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 1.5 : 1.5 VTROL LEVER : 500 : 1.5 : 1.5	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,36 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION SET  Control lever position YA mm : 34,838,8  Control lever
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- FULL-LOAD STOP COM Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- IDLE DELIVERY Rated speed rpm	: 1.5 : 1.5 VTROL LEVER : 500 : 1.5 : 1.5	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,36 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION SET  Control lever position YA mm : 34,838,8
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- FULL-LOAD STOP COM Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- IDLE DELIVERY Rated speed rpm Del. quantity cm3/1000 strokes	: 1.5 : 1.5 NTROL LEVER : 500 : 1.5 : 1.5 : 1.5	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,36 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION SET  Control lever position YA mm : 34,838,8  Control lever
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- FULL-LOAD STOP CON Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- IDLE DELIVERY Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes	: 1.5 : 1.5 VITROL LEVER : 500 : 1.5 : 1.5 : 1.5 : 1.5	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,36 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION SET  Control lever position YA mm : 34,838,8  Control lever
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- FULL-LOAD STOP COM Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- IDLE DELIVERY Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes	: 1.5 : 1.5 VITROL LEVER : 500 : 1.5 : 1.5 : 1.5 : 1.5 : 1.5	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,36 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION SET  Control lever position YA mm : 34,838,8  Control lever position YB mm : 39,945,1
cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- FULL-LOAD STOP COM Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- IDLE DELIVERY Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance	: 1.5 : 1.5 VITROL LEVER : 500 : 1.5 : 1.5 : 1.5 : 1.5 : 1.5	Dimension KF mm : 5,2 Tolerance mm + : +-0,2 MS1 dimension mm : 1,36 Tolerance mm + : +0,15/-0,1  CONTROL LEVER POSITION SET  Control lever position YA mm : 34,838,8  Control lever position YB mm : 39,945,1

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.10.95 Test oil : ISO 4113

Part no. : 0 460 484 081 Pump designation : VE4/8F2400R622

Customer—spec. information Customer : FORD : 1,3 L IDI Motor Power KW

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C +:

Overflow

restriction mm 0.55 .

Inlet press. bar : Tolerance bar 🕂 :

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

bar 130 Tolerance bar +-:

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 0,85 Tolerance mm + : + -0.05Outlet | : B

# INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500 Setting mm 5.1

Tolerance mm 0.2 Shutoff solenoid 12 Volt

#### SUPPLY PUMP PRESSURE

Rated speed rpm 1500

Supply pomp

pressure bar 6.8 Tolerance bar + : 0.3 Shutoff solenoid

Volt

12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

1500 Rated speed rpm :

Dei. quantity

cm3/1000 strokes : 29.0

Tolerance

cm3/1000 str. + :0.2

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 3.0

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid

Volt 12

# IDLE DELIVERY

Rated speed rpm : 450 Del. quantity

cm3/1000 strokes :

8.0

Tolerance

cm3/1000 str. + :1.0

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid + Volt : 12	Rated speed rpm : 1200 Del. quantity
HIGH IDLE SETTING	cm3/1000 strokes :0.8 Tolerance
Rated speed rpm : 525	cm3/1000 str. +-: 0.1 Shutoff solenoid
Del. quantity + cm3/1000 strokes : 13.0 +	Volt : 12
Tolerance + 1.0 + 1.0	INJECTION-PUMP TEST SPECIFICATIONS
Shutoff solenoid +	
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION +	Rated speed rpm : 2400
Rated speed rpm : 2550  Del. quantity	SV travel mm : 9.5
cm3/1000 strokes : 20.0	Tolerance mm +-: 0.4 Check
Tolerance + cm3/1000 str. + : 3.0 +	tolerance mm +-: 0.8 Shutoff solenoid
Shutoff solenoid + Volt : 12 +	Volt : 12
+	Rated speed rpm : 800
STARTING FUEL DELIVERY +	SV travel mm : 1.5
Rated speed rpm : 100 + Del. quantity +	Tolerance mm +-: 0.4 Check
cm3/1000 strokes : 60.0	tolerance mm + : 0.8
cm3/1000 str. + : 10.0	Shutaff solenoid Volt : 12
Shutoff solenoid + Volt : 12 +	Rated speed rpm : 400
+	
Ţ	SV travel mm : 2.4 Tolerance mm +-: C.1
LOAD-DEPENDENT START OF DELIVERY SETTING	Check tolerance mm +-: 1.0
+	Shutoff solenoid
DELIVERY DIFFERENCE +	Volt : 12
Rated speed rpm : 1200 + Del. quantity +	KSB/AFB Volt : 12
cm3/1000 strokes : -9.4 Tolerance	Rated speed rpm : 1000
cm3/1000 str. + : 1.0	SV travel mm : 4.4
Shutoff solenoid + Volt : 12 +	Tolerance mm + : 1.2 Check
PRESSURE DIFFERENCE	tolerance mm +-: 1.3 Shutoff solenoid
+	Volt : 12
Rated speed rpm : 1200 + Del. quantity	KSB/AFB Volt : 12
cm3/1000 strokes : -0.2	SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 str. +: 0.1 Shutoff solenoid	Rated speed rpm : 2400
Volt : 12	Supply pomp
TIMING-DEVICE TRAVEL DIFFERENCE	pressure bar : 9.9 Tolerance bar +-: 0.3
+	

Shutoff solenoid	+ Check tolerance
Volt : 12	+ cm3/1000s. $+$ : 1.0
	+ Shutoff solenoid
Rated speed rpm : 750	+ Volt : 12
Supply pomp	
pressure bar : 4.6	Rated speed rpm : 2400
Tolerance bar +: 0.3	Del. quantity
Shutoff solenoid	
Volt : 12	+ Tolerance
	+  cm3/1000  str. + : 1.0
OVERFLOW QUANTITY	+ Check tolerance
	+  cm3/1000s. + : 2.0
Rated speed rpm : 2400	+ Shutoff solenoid
Overflow quantity	+ Volt : 12
ccm/10s : 97.2	+
Tolerance	Rated speed rpm : 750
ccm/10s + : 41.6	Del. quantity
	cm3/1000 strokes : 28.4
Check tolerance	Tolerance
ccm/10s + : 41.6	
Shutoff solenoid	+ cm3/1000 str. +: 1.5
	+ Check tolerance
Volt : 12	+  cm3/1000s. + : 2.3
	+ Shutoff solenoid
Rated speed rpm : 450	+ Volt : 12
Overflow quantity	+
ccm/10s : 63.8	+ Rated speed rpm : 1000
Tolerance	+ Del. quantity
ccm/10s +: 22.2	+ sin3/1000 strokes : 29.3
	+ Tolerance
Check tolerance	cm3/1000 str. + : 1.5
ccm/10s +: 22.2	Check tolerance
Shutoff solenoid	
	+  cm3/1000s. + : 2.3
Volt : 12	+ Shutoff solenoid
	+ Volt : 12
DELIVERY AND BREAKAWAY CHARACTE	
	+ Rated speed rpm : 450
Rated speed rpm : 2550	+ Del. quantity
Del. quantity	+ cm3/1000 strokes : 31.5
cm3/1000 strokes : 20.0	+ Tolerance
Tolerance	+ cm3/1000 str. $+$ : 2.0
cm3/1000 str. + : 3.0	+ Check tolerance
Check tolerance	- cm3/1000s. +-: 2.8
cm3/1000s. $+:$ 4.5	+ Shutoff solenoid
Shutoff solemoid	+ Volt : 12
Volt : 12	
1 12	Rated speed rpm : 1500
Rated speed rpm : 2625	
	+ Del. quantity
Del. quantity	+ cm3/1000 strokes : 29.0
cm3/1000 strokes : 13.5	+ Tolerance
Check tolerance	+ cm3/1000 str. +: 0.2
cm3/1000s. + : 6.0	+ Check tolerance
Shutoff solenoid	+ cm3/1000s. $+$ : 1.7
Volt : 12	+ Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 2950	+
Del. quantity	1
cm3/1000 strokes : 1.0	
Tolerance	ELECTR. SHUTOFF
cm3/1000 str. +-: 1.0	CONTROL LEVER, IDLE STOP
CHD/ FOUC SEE. F F.U	I COMINGE FEACH' THE SIDE
	Т

Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread	Del. quantity cm3/1000 strokes : 5.0 Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid Volt : 12
cm3/1000 strokes : 5.0	TIMING-DEVICE TRAVEL DIFFERENCE
FULL-LOAD STOP CONTROL LEVER	Rated speed rpm : 1200
Rated speed rpm : 425 Del. quantity	Tolerance mm +-: 0.4 Check
cm3/1000 strokes : 1.5 Tolerance	tolerance mm +-: 0.4 Shutoff solenoid
cm3/1000 str. + : 1.5 Spread	Volt : 12
cm3/1000 strokes : 5.0	5/414/45 040 0500000000000000000000000000000
Check tolerance cm3/1000s. +-: 1.5	+ EXHAUST-GAS RECIRCULATION
Spread cm3/1000 strokes : 5.0	Rated speed rpm : 1250 Del. quantity
Cinar room strokes . J. o	cm3/1000 strokes : 20.0 Tolerance
	- cm3/1000 str. +-: 0.5 - Check tolerance
	cm3/1000s. +: 2.5  Shutoff solenoid
CHECKING LOAD-DEPENDENT START OF DELIVERY	Volt : 12
DELIVERY DIFFERENCE	Rated speed rpm : 600 Del. quantity
	+ cm3/1000 strokes : 10.0
Del. quantity	+ Tolerance - cm3/1000 str. +: 0.5
cm3/1000 strokes : -10.6 Tolerance	+ Check tolerance - cm3/1000s. + : 2.5
cm3/1000 str. +-: 4.0 Check tolerance	+ Shutoff solenoid + Volt : 12
cm3/1000s. + : 4.0 Shutoff solenoid	START TRANSITION
Volt : 12	+
TIMING-DEVICE TRAVEL DIFFERENCE	+ Rated speed rpm : 500 + Del. quantity
Rated speed rpm : 1200	+ cm3/1000 strokes : 32.0 + Tolerance
Del. quantity cm3/1000 strokes : -0.8	- cm3/1000 str. +: 6.0 - Shutoff solenoid
Tolerance	Volt : 12
cm3/1000 str. +-: 0.1 Check tolerance	‡
cm3/1000s. +-: 0.1 Shutoff solenoid	Rated speed rpm : 275 Del. quantity
Volt : 12	+ cm3/1000 strokes : 65.0
DELIVERY DIFFERENCE	Tolerance cm3/1000 str. +-: 15.0 Shutoff solenoid
Rated speed rpm : 1200	Volt : 12

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 6,0
Tolerance mm + : +0,2
Dimension MS mm : 1,8
Tolerance mm + : +0,2

# POTENTIOMETER

SET

# 1. measurement

voltage Volt : 1= 3,4 V

2. measurement

voltage Volt : 2= 1,7 V

# MICROSWITCH

SET

mm : 1=ARF 12,0

: 2=ARF 12,0

# CONTROL LEVER POSITION

SET

Control lever

position YA mm : 38,0..42,0

Control lever

position YB mm : 57,3..66,3

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.10.95 Test oil : ISO 4113

: 0 460 484 082 Part no. Pump designation: VE4/8F2400R622-1

Customer-spec. information : FORD Customer Motor : 1,8 L IDI Power KW 44.0

#### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C Tolerance \*C +- 3

Overflow

restriction mm : 0.55

Inlet press, bar : 0.35 Tolerance bar +: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

bar Tolerance bar +-:

: 1 680 750 073 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

#### REMARKS

# BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 0,85 Tolerance mm +:+0.05Outlet

#### INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm Tolerance mm + : 0.2 Shutoff solenoid Volt 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Supply pomp

pressure bar 6.8 Tolerance bar + : 0.3 Shutoff solenoid Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500

Del. quantity

cm3/1000 strokes : 29.0

Tolerance

cm3/1000 str. +-: 0.2 Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 500 Del. quantity

cm3/1000 strokes :

Tolerance

cm3/1000 str. + : 0.5 Shutoff solenoid

Volt 12

#### IDLE DELIVERY

Rated speed rpm : 450

Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 str. + :1.0

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid Volt : 12	+ Rated speed rpm : 1200 + Del. quantity
HIGH IDLE SETTING	+ cm3/1000 strokes : -0.8 + Tolerance
Rated speed rpm : 525	+ cm3/1000 str. +-: 0.1 + Shutoff solenoid
Del. quantity cm3/1000 strokes : 13.0	+ Volt : 12
Tolerance cm3/1000 str. +: 1.0	INJECTION-PUMP TEST SPECIFICATIONS
Shutoff solenoid Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	+
	Rated speed rpm : 2400
Rated speed rpm : 2550 Del. quantity	+ SV travel mm : 9.5 + Tolerance mm + : 0.4
cm3/1000 strokes : 20.0	+ Check
Tolerance cm3/1000 str. + : 3.0	tolerance mm +: 0.8 Shutoff solenoid
Shutoff solenoid Volt : 12	+ Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 800
	SV travel mm : 1.5
Rated speed rpm : 100 Del. quantity	Tolerance mm +-: 0.4 Check
cm3/1000 strokes : 60.0 Tolerance	tolerance mm + : 0.8 Shutoff solenoid
cm3/1000 str. +-: 10.0	Volt : 12
Shutoff solenoid Volt : 12	Rated speed rpm : 400
	SV travel mm : 2.4
LOAD-DEPENDENT START OF DELIVERY	+ Tolerance mm +: 0.1 + Check
SETTING	tolerance mm +: 1.0  + Shutoff solenoid
DELIVERY DIFFERENCE	Volt : 12
Rated speed rpm : 1200 Del. quantity	KSB/AFB Volt : 12
cm3/1000 strokes : -9.4 Tolerance	Rated speed rpm : 1000
cm3/1000 str. +-: 1.0	SV travel mm : 4.4
Shutoff solenoid Volt : 12	+ Tolerance mm + : 1.2 + Check
PRESSURE DIFFERENCE	<pre>+ tolerance mm +: 1.3 + Shutoff solenoid</pre>
Rated speed rpm : 1200	+ Volt : 12
Del. quantity cm3/1000 strokes : -0.2	KSB/AFB Volt : 12
Tolerance	SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 str. +-: 0.1 Shutoff solenoid	+ Rated speed rpm : 2400
Volt : 12	- Supply pomp - pressure bar : 9.9
TIMING-DEVICE TRAVEL DIFFERENCE	Tolerance bar +-: 0.3
	7

Shutoff solenoid	. 42	+	Check tolerance		4.0	
Volt	: 12	1	cm3/1000s. +- Shutoff solenoid	:	1.0	
Rated speed rpm Supply pomp	: 750	+	Volt	:	12	
pressure bar Tolerance bar +	: 4.6 : 0.3	Ŧ	Rated speed rpm	:	2400	
Shutoff solenoid		Ť	Del. quantity cm3/1000 strokes	:	29.3	
Volt	: 12	‡	Tolerance cm3/1000 str. +-	:	1.0	
OVERFLOW QUANTITY		‡	Check tolerance cm3/1000s. +-	:	2.0	
Rated speed rpm Overflow quantity		‡	Shutoff solenoid Volt	:	12	
ccm/10s Tolerance	: 97.2	‡	Rated speed rpm	:	750	
ccm/10s +-	: 41.6.	+	Del. quantity cm3/1000 strokes	:	28.4	
Check tolerance ccm/10s +	: 41.6	1	Tolerance cm3/1000 str. +-	•	1.5	
Shutoff solenoid Volt	: 12	1	Check tolerance cm3/1000s. +-	•	2.3	
	: 450	$\frac{1}{2}$	Shutoff solenoid	:	12	
Overflow quantity ccm/10s	: 63.8	<del>-</del>		:	1000	
Tolerance ccm/10s +-	: 22.2	Ŧ	Rated speed rpm Del. quantity	-		
	: 62.6	Ŧ	cm3/1000 strokes		29.3	
Check tolerance ccm/10s +	: 22.2	‡	cm3/1000 str. +- Check tolerance	:	1.5	
Shutoff solenoid Volt	: 12	‡	cm3/1000s. +- Shutoff solenoid	:	2.3	
DELIVERY AND BREAK	CAWAY CHARACTE	ERISTIC T	Volt	:	12	
Rated speed rpm	: 2550	‡	Rated speed rpm Del. quantity	:	450	
Del. quantity cm3/1000 strokes	: 20.0	‡	cm3/1000 strokes Tolerance	:	31.5	
Tolerance cm3/1000 str. +-	: 3.0	‡	cm3/1000 str. +- Check tolerance	:	2.0	
Check tolerance cm3/1000s. +-	: 4.5	+	cm3/1000s. +- Shutoff solenoid	:	2.8	
Shutoff solenoid Volt	: 12	<u> </u>	Volt	:	12	
Rated speed rpm	: 2625	<u>†</u>	Rated speed rpm Del. quantity	:	1500	
Del. quantity cm3/1000 strokes	: 13.5	1	cm3/1000 strokes Tolerance	:	29.0	
Check tolerance cm3/1000s. +-	: 6.0	Ŧ	cm3/1000 str. +	:	0.2	
Shutoff solenoid		Ŧ	cm3/1000s. +-	:	1.7	
Volt	: 12	‡	Shutoff solenoid Volt	:	12	
Rated speed rpm Del. quantity	: 2950	‡				
cm3/1000 strokes Tolerance	: 1.0	‡	ELECTR. SHUTOFF			
cm3/1000 str. +	: 1.0	†	CONTROL LEVER, IDL	E S	TOP	
		т				

Rated speed rpm : 425	1 Del quantity
	+ Del. quantity
Del. quantity	+ cm3/1000 strokes : 5.0
cm3/1000 strokes : 1.5	+ Tolerance
Tolerance	+  cm3/1000  str. + -: 3.0
cm3/1000 str. + : 1.5	+ Check tolerance
Check tolerance	+ cm3/1000s. $+$ : 3.0
cm3/1000s. + : 1.5	+ Shutoff solenoid
Spread	+ Volt : 12
cm3/1000 strokes : 5.0	<del> </del>
	TIMING NEVITCE TOALIEL NICEEDENICE
	† TIMING-DEVICE TRAVEL DIFFERENCE
FULL-LOAD STOP CONTROL LEVER	+
	+ Rated speed rpm : 1200
Rated speed rpm : 425	
	+ Tolerance mm + : 0.4
Del. quantity	+ Check
cm3/1000 strokes : 1.5	tolerance mm +-: 0.4
Tolerance	
	+ Shutoff solenoid
cm3/1000 str. +-: 1.5	+ Volt : 12
Spread	1
cm3/1000 strokes : 5.0	
Check tolerance	+ EXHAUST-GAS RECIRCULATION
cm3/1000s. +-: 1.5	+
Spread	Pated aroad page 1250
	+ Rated speed rpm : 1250
cm3/1000 strokes : 5.0	+ Del. quantity
	+ cm3/1000 strokes : 20.0
	+ Tolerance
	+ cm3/1000 str. $+$ : 0.5
	∔         Check tolerance
	+ cm3/1000s. +-: 2.5
	† Shutoff solenoid
CHECKING LOAD-DEPENDENT	+ Volt : 12
START OF DELIVERY	1
DIAMI OF DELIVERY	T
	+ Rated speed rpm : 600
DELIVERY DIFFERENCE	+ Del. quantity
DELIVERY DIFFERENCE	+ Del. quantity
	+ cm3/1000 strokes : 10.0
Rated speed rpm : 1200	+ cm3/1000 strokes : 10.0 + Tolerance
Rated speed rpm : 1200	+ cm3/1000 strokes : 10.0 + Tolerance
Rated speed rpm : 1200 Del. quantity	+ cm3/1000 strokes : 10.0 + Tolerance + cm3/1000 str. +- : 0.5
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6	+ cm3/1000 strokes : 10.0 + Tolerance + cm3/1000 str. +- : 0.5 + Check tolerance
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance	- cm3/1000 strokes : 10.0 - Tolerance - cm3/1000 str. +- : 0.5 - Check tolerance - cm3/1000s. +- : 2.5
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6	- cm3/1000 strokes : 10.0 - Tolerance - cm3/1000 str. +- : 0.5 - Check tolerance - cm3/1000s. +- : 2.5
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0	- cm3/1000 strokes : 10.0 - Tolerance - cm3/1000 str. + : 0.5 - Check tolerance - cm3/1000s. + : 2.5 - Shutoff solenoid
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance	- cm3/1000 strokes : 10.0 - Tolerance - cm3/1000 str. +- : 0.5 - Check tolerance - cm3/1000s. +- : 2.5
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0	- cm3/1000 strokes : 10.0 Tolerance - cm3/1000 str. + : 0.5 Check tolerance - cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -10.6  Tolerance cm3/1000 str. + : 4.0  Check tolerance cm3/1000s. + : 4.0  Shutoff solenoid	- cm3/1000 strokes : 10.0 - Tolerance - cm3/1000 str. + : 0.5 - Check tolerance - cm3/1000s. + : 2.5 - Shutoff solenoid
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -10.6  Tolerance cm3/1000 str. + : 4.0  Check tolerance cm3/1000s. + : 4.0  Shutoff solenoid	- cm3/1000 strokes : 10.0 Tolerance - cm3/1000 str. + : 0.5 Check tolerance - cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0	- cm3/1000 strokes : 10.0 - Tolerance - cm3/1000 str. + : 0.5 - Check tolerance - cm3/1000s. + : 2.5 - Shutoff soleroid - Volt : 12 - START TRANSITION
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12	cm3/1000 strokes: 10.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +-: 2.5 Shutoff soleroid Volt: 12  START TRANSITION  Rated speed rpm: 500
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -10.6  Tolerance cm3/1000 str. + : 4.0  Check tolerance cm3/1000s. + : 4.0  Shutoff solenoid	- cm3/1000 strokes : 10.0 - Tolerance - cm3/1000 str. +- : 0.5 - Check tolerance - cm3/1000s. +- : 2.5 - Shutoff soleroid - Volt : 12 - START TRANSITION
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12	cm3/1000 strokes: 10.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt: 12  START TRANSITION  Rated speed rpm: 500 Del. quantity
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE	cm3/1000 strokes: 10.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt: 12  START TRANSITION  Rated speed cpm: 500 Del. quantity cm3/1000 strokes: 32.0
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -10.6  Tolerance cm3/1000 str. + : 4.0  Check tolerance cm3/1000s. + : 4.0  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200	cm3/1000 strokes: 10.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt: 12  START TRANSITION  Rated speed cpm: 500 Del. quantity cm3/1000 strokes: 32.0 Tolerance
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -10.6  Tolerance cm3/1000 str. + : 4.0  Check tolerance cm3/1000s. + : 4.0  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity	cm3/1000 strokes: 10.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt: 12  START TRANSITION  Rated speed opm: 500 Del. quantity cm3/1000 strokes: 32.0 Tolerance cm3/1000 str. +: 6.0
Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : -10.6  Tolerance cm3/1000 str. + : 4.0  Check tolerance cm3/1000s. + : 4.0  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity	cm3/1000 strokes: 10.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt: 12  START TRANSITION  Rated speed opm: 500 Del. quantity cm3/1000 strokes: 32.0 Tolerance cm3/1000 str. +-: 6.0
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8	cm3/1000 strokes: 10.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt: 12  START TRANSITION  Rated speed opm: 500 Del. quantity cm3/1000 strokes: 32.0 Tolerance cm3/1000 str. +: 6.0 Shutoff solenoid
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance	cm3/1000 strokes: 10.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt: 12  START TRANSITION  Rated speed opm: 500 Del. quantity cm3/1000 strokes: 32.0 Tolerance cm3/1000 str. +-: 6.0
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1	cm3/1000 strokes: 10.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt: 12  START TRANSITION  Rated speed opm: 500 Del. quantity cm3/1000 strokes: 32.0 Tolerance cm3/1000 str. +: 6.0 Shutoff solenoid
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1	cm3/1000 strokes: 10.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt: 12  START TRANSITION  Rated speed opm: 500 Del. quantity cm3/1000 strokes: 32.0 Tolerance cm3/1000 str. +: 6.0 Shutoff solenoid
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Check tolerance	cm3/1000 strokes: 10.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff soleroid Volt: 12  START TRANSITION  Rated speed cpm: 500 Del. quantity cm3/1000 strokes: 32.0 Tolerance cm3/1000 str. +: 6.0 Shutoff soleroid Volt: 12
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Check tolerance cm3/1000s. + : 0.1	cm3/1000 strokes: 10.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff soleroid Volt: 12  START TRANSITION  Rated speed rpm: 500 Del. quantity cm3/1000 strokes: 32.0 Tolerance cm3/1000 str. +: 6.0 Shutoff soleroid Volt: 12  Rated speed rpm: 275
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Check tolerance cm3/1000s. + : 0.1 Shutoff solenoid	cm3/1000 strokes: 10.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff soleroid Volt: 12  START TRANSITION  Rated speed cpm: 500 Del. quantity cm3/1000 strokes: 32.0 Tolerance cm3/1000 str. +: 6.0 Shutoff solenoid Volt: 12  Rated speed rpm: 275 Del. quantity
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Check tolerance cm3/1000s. + : 0.1	cm3/1000 strokes: 10.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff soleroid Volt: 12  START TRANSITION  Rated speed rpm: 500 Del. quantity cm3/1000 strokes: 32.0 Tolerance cm3/1000 str. +: 6.0 Shutoff soleroid Volt: 12  Rated speed rpm: 275
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Check tolerance cm3/1000s. + : 0.1 Shutoff solenoid	Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed cpm : 500 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 str. +: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 275 Del. quantity cm3/1000 strokes : 65.0
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Check tolerance cm3/1000s. + : 0.1 Shutoff solenoid Volt : 12	Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed cpm : 500 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 str. +: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 275 Del. quantity cm3/1000 strokes : 65.0 Tolerance
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Check tolerance cm3/1000s. + : 0.1 Shutoff solenoid	Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 str. +: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 275 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. +- : 15.0
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Check tolerance cm3/1000s. + : 0.1 Shutoff solenoid Volt : 12	Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed cpm : 500 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 str. +: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 275 Del. quantity cm3/1000 strokes : 65.0 Tolerance
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Check tolerance cm3/1000s. + : 0.1 Shutoff solenoid Volt : 12  DELIVERY DIFFERENCE	Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 str. +: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 275 Del. quantity cm3/1000 str. +: 65.0 Tolerance cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid
Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -10.6 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : -0.8 Tolerance cm3/1000 str. + : 0.1 Check tolerance cm3/1000s. + : 0.1 Shutoff solenoid Volt : 12	Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 str. +: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 275 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. +- : 15.0

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 6,0
Tolerance mm + : +0,2
Dimension MS mm : 1,8
Tolerance mm + : +0,2

# POTENTIOMETER

SET

# 1. measurement

voltage Volt : 1 = 3,4 V 2. measurement

voltage Volt : 2 = 1.7 V

## MICROSWITCH SET

· (L )

mm : 1=ARF 12,0 : 2=ARF 12,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 38,0..42,0

Control lever

position YB mm : 57,3..66,3

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.10.95 Test oil : ISO 4113

Part no. : 0 460 426 242 Pump designation : VE6/12F1350R623

Customer—spec. information
Customer : IVECO—FIAT
Motor : 8060.458.5100
Power KW : 130.0

#### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C : 55
Tolerance °C +: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

Setting mm : 2.0
Tolerance mm + : 0.1
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 6.8
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 24
KSB/AFB Volt : 24

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 700 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 79.0 Tolerance cm3/1000 str. + :0.5 Spread cm3/1000 strokes : Check tolerance cm3/1000s. 5.0 Shutoff solenoid Volt 24 KSB/AFB Volt : 24

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 58.5 Tolerance cm3/1000 str. + : 0.5 Shutoff solenoid Volt 24 Check tolerance cm3/1000s.5.0 KSB/AFB Volt 24

IDLE SETTING

Rated speed rpm : 350	1
Del. quantity	KSB/AFB Volt : 24
cm3/1000 strokes : 16.0	+
Tolerance cm3/1000 str. +-: 2.0	Rated speed rpm : 900
Shutoff solenoid	+ Aneroid pressure + hPa : 1000
Volt : 24	+ 1000
Spread	+ SV travel mm : 0.8
cm3/1000 strokes : 5.0 Check tolerance	+ Tolerance mm +-: 0.3 + Check
cm3/1000s. : 5.0	tolerance mm + : 0.7
	+ Shutoff solenoid
KSB/AFB Volt : 24	+ Volt : 24
	† + KSB/AFB Volt : 24
	+ Setting point KSB
	+ Rated speed rpm : 340
FULL-LOAD SPEED REGULATION	+ Aneroid pressure + hPa : 1000
Rated speed rpm : 1500	+ hPa : 1000
Pressure hPa : 1000	SV travel mm : 2.0
Del. quantity	Tolerance mm + : 0.2
cm3/1000 strokes : 40.0	+ Check + tolerance mm +-: 1.2
cm3/1000 str. +-: 3.0	+ Shutoff solenoid
Shutoff solenoid	† Volt : 24
Volt : 24	+ Rated speed rpm : 470
KSB/AFB Volt : 24	+ Aneroid pressure
	hPa : 1000
STARTING FUEL DELIVERY	7.2
Rated speed rpm : 100	+ SV travel mm : 3.2 + Tolerance mm ++: 0.6
Del. quantity	+ Check
cm3/1000 strokes : 85.0	tolerance mm + : 0.7
Tolerance cm3/1000 str. +-: 25.0	+ Shutoff solenoid + Volt : 24
Shutoff solenoid	T vott . 24
Volt : 24	SUPPLY PUMP PRESSURE CHARACTERISTIC
KSB/AFB Volt : 24	Bottod opend row a 1750
RSB/AFB VOLL : 24	+ Rated speed rpm : 1350 - Aneroid pressure
	hPa : 1000
	- Supply pomp
	pressure bar : 8.7 Tolerance bar +-: 0.3
INJECTION-PUMP TEST SPECIFICATIONS	Shutoff solenoid
TIMENO AND AND AND AND AND AND AND AND AND AND	+ Volt : 24
TIMING DEVICE CHARACTERISTIC	+ + KSB/AFB Volt : 24
Rated speed rpm : 1100	+ KOB/A/B VOCC . 24
Aneroid pressure	Rated speed rpm : 600
hPa : 1000	Aneroid pressure
SV travel mm : 3.1	hPa : 1000 Supply pomp
Tolerance mm + : 0.3	pressure bar : 4.4
Check	Tolerance bar +-: 0.3
tolerance mm +: 0.7 Shutoff solenoid	- Shutoff solenoid - Volt : 24
Volt : 24	. 24
	•

		+	Rated speed rpm	:	1450
KSB/AFB Volt	: 24	+	Aneroid pressure	•	
Rated speed rpm	: 470	1	hPa Del. quantity	:	1000
Aneroid pressure		+	cm3/1000 strokes	:	58.0
hPa Supply pomp	: 1000	İ	Tolerance cm3/1000 str. +-		8.0
pressure bar	: 7.8	Ī	Check tolerance	•	0.0
Tolerance bar +- Shutoff solenoid	: 0.8	+	cm3/1000s. +-	:	10.0
Volt	: 24	I	Shutoff solenoid Volt	:	24
OVERFLOW QUANTITY		+	VCD /AFD Vala		2/
OVERIEUM GONIVITIE		Į	KSB/AFB Volt	:	24
Rated speed rpm	: 1350	+	Rated speed rpm	:	1600
Aneroid pressure hPa	: 1000	1	Aneroid pressure hPa	:	1000
Overflow quantity	07.7	+	Del. quantity		
ccm/10s Tolerance	: 83.3	1	cm3/1000 strokes Tolerance	:	1.5
ccm/10s +-	: 27.7	+	cm3/1000 str. +	:	1.5
Check tolerance		1	Check tolerance cm3/1000s. +-		1.5
ccm/10s +-	: 27.7	+	Shutoff solenoid	•	
Shutoff solenoid Volt	: 24	1	Volt	:	.24
		+	KSB/AFB Volt	:	24
KSB/AFB Volt	: 24	1	Rated speed rpm	:	600
Rated speed rpm	: 600	+	Aneroid pressure	•	
Aneroid pressure hPa	: 1000	1	hPa Del. quantity	:	350
Overflow quantity		Ŧ	cm3/1000 strokes	:	68.5
ccm/10s Tolerance	: 63.8	†	Tolerance cm3/1000 str. +-		0.5
ccm/10s +	: 22.2	Ŧ	Check tolerance	•	0.5
Check tolerance		†	cm3/1000s. +- Shutoff solenoid	:	4.0
ccm/10s +	: 22.2	I	Volt	:	24
Shutoff solenoid Volt	: 24	+	VCD/ACD Val+	_	2/
VOLU	: 24	Ī	KSB/AFB Volt	:	24
KSB/AFB Volt	: 24	+	Rated speed rpm	:	1350
DELIVERY AND BREAK	KAWAY CHARAC	TERISTIC	Aneroid pressure hPa	:	1000
Dated aread non	. 1500	+	Del. quantity		
Rated speed rpm Aneroid pressure		1	cm3/1000 strokes Tolerance	:	73.0
hPa	: 1000	+	cm3/1000 str. +-	:	1.5
Del. quantity cm3/1000 strokes	: 40.0	1	Check tolerance cm3/1000s. +-	:	3.5
Tolerance		+	Shutoff solenoid	-	
cm3/1000 str. +- Check tolerance	: 3.0	‡	Volt	:	24
cm3/1000s. +-	: 6.0	+	KSB/AFB Volt	:	24
Shutoff solenoid Volt	: 24	‡	Rated speed rpm	:	1000
		+	Aneroid pressure		
KSB/AFB Volt	: 24	1	hPa	:	1000
		i			

Del. quantity		+
cm3/1000 strokes : Tolerance	76.5	+ ELECTR. SHUTOFF
cm3/1000 str. +-:	2.0	+ CONTROL LEVER, IDLE STOP
Check tolerance	. 7 F	+
cm3/1000s. +-: Shutoff solenoid	3.5	+ Rated speed rpm : 350 + Del. quantity
Volt :	: 24	+ cm3/1000 strokes : 1.5
MCD/AFD Volt	. 3/	+ Tolerance
KSB/AFB Volt :	: 24	+ cm3/1000 str. +-: 1.5 + Check tolerance
	: 600	+ cm3/1000s. + : 1.5
Aneroid pressure hPa :	: 1000	†
Del. quantity	1000	IDLE DELIVERY
cm3/1000 strokes :	82.0	+
Tolerance cm3/1000 str. + :	2.0	+ Rated speed rpm : 425 + Del. quantity
Check tolerance	2.0	+ cm3/1000 strokes : 1.5
cm3/1000s. +:	3.5	† Tolerance
Shutoff solenoid Volt :	24	+ cm3/1000 str. +-: 1.5 + Check tolerance
		+ cm3/1000s. $+-$ : 1.5
KSB/AFB Volt :	24	+ Shutoff solenoid + Voit : 24
Rated speed rpm :	700	+ *************************************
Aneroid pressure	4.000	+ KSB/AFB Volt : 24
hPa : Del. quantity	1000	<u> </u>
cm3/1000 strokes :	79.0	+
Tolerance cm3/1000 str. +-:	0.5	<u>†</u>
Check tolerance	0.5	Ţ
cm3/1000s. +-:	3.5	+ START TRANSITION
Shutoff solenoid Volt :	24	Rated speed rpm : 250
	_,	+ Del. quantity
MECHANICAL SHUTOFF		
MECHANICAL SAGIOFF		+ cm3/1000 str. +-: 17.0
Rated speed rpm :	1350	+ Shutoff solenoid
Aneroid pressure hPa :	1000	† Volt : 24
Del. quantity		KSB/AFB Volt : 24
cm3/1000 strokes : Tolerance	1.5	
cm3/1000 str. + :	1.5	Rated speed rpm : 130
Spread	<b>5</b> 0	+ Del. quantity
cm3/1000 strokes : Check tolerance	5.0	cm3/1000 strokes : 85.0 Tolerance
cm3/1000s. +-:	1.5	+ cm3/1000 str. +-: 25.0
Spread cm3/1000 strokes :	5.0	+ Shutoff solenoid + Volt : 24
Shutoff solenoid		T voi: : 24
Volt :	24	KSB/AFB Volt : 24
KSB/AFB Volt :	24	<u> </u>
	<del>-</del> ·	ASSEMBLY AND ADJUSTMENT DIMENSIONS
		Dimension K mm : 3,6
		+ Dimension K mm : 3,6

Tolerance mm +-: +-0,1 Dimension KF mm : 6,4

Tolerance mm + : +0,2

MS1 dimension mm : 1,6

Tolerance mm + : +0,15/-0,1

CONTROL LEVER POSITION SET

Control lever

: 37,9..39,9 position YA mm

Control Lever

position YB mm : 43,1..48,3

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.03.96 Test oil : ISO 4113

Part no. : 0 460 424 117 Pump designation : VE4/12F120OR636

Customer-spec. information Customer : MAN

Motor : D 0324 LFL 01 Power KW : 114.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar ←: 0.05

Test nozzle holde

assembly : 1 688 901 110

Opening pressure

bar : 250 Tolerance bar +- : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 850
Aneroid pressure
hPa : 1500

Setting mm : 2.2 Tolerance mm +: 0.2

KSB/AFB Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 850

Aneroid pressure

hPa : 1500

Supply pomp

pressure bar : 6.7 Tolerance bar +: 0.3

KSB/AFB Volt : 12

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000 Aneroid pressure

hPa : 1500

Del. quantity

cm3/1000 strokes : 108.0

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s : 4.5

KSB/AFB Volt : 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550

Del. quantity

cm3/1000 strokes : 61.0

Tolerance

cm3/1000 str. + : 0.5

Check tolerance

cm3/1000s. : 4.5

KSB/AFB Volt : 12

## IDLE SETTING

Rated speed rpm : 400

Del. quantity cm3/1000 strokes : 14.5

Tolerance

cm3/1000 str. +-: 2.0

Spread

cm3/1000 strokes : 6.0

Check tolerance	+ Rated speed rpm : 1200
cm3/1000s. : 6.5	+ Aneroid pressure
	+ hPa ; 1500
KSB/AFB Volt : 12	+
	+ SV travel mm : 4.9
	+ Tolerance mm +-: 0.4
	+ Check
	+ tolerance mm +-: 0.4
FULL-LOAD SPEED REGULATION	†
	+ KSB/AFB Volt : 12
Rated speed rpm : 1300	+
Pressure hPa : 1500	SUPPLY PUMP PRESSURE CHARACTERISTIC
Del. quantity	
cm3/1000 strokes : 75.0	Rated speed rpm : 1200
Tolerance	Aneroid pressure
cm3/1000 str. +-: 3.0	+ hPa : 1500
KSB/AFB Volt : 12	+ Supply pomp
NOD/AFB VOLE : 12	pressure bar : 8.6
	Tolerance bar +: 0.3
SET GRADUATED STARTING DELIVERY	KSB/AFB Volt : 12
CONTROL LEVER, IDLE STOP	1 100/4/8 1000
downing frame, there old	Rated speed rpm : 550
Rated speed rpm : 100	+ Aneroid pressure
Del. quantity	+ hPa : 1500
cm3/1000 strokes : 135.0	+ Supply pomp
Tolerance	+ pressure bar : 5.2
cm3/1000 str. +-: 1.0	+ Tolerance bar + : 0.3
	†
KSB/AFB Volt : 12	+ KSB/AFB Volt : 12
	OUTDELON CHANTETY
	OVERFLOW QUANTITY
	Rated speed rpm : 550
INJECTION-PUMP TEST SPECIFICATIONS	- Overflow quantity
2110 20 1 2011 1 0111 1 1 20 1 01 (021 20) 1 20 1 0	+ ccm/10s : 63.8
TIMING DEVICE CHARACTERISTIC	Tolerance
	ccm/10s +-: 22.2
Rated speed rpm : 1000	+
Aneroid pressure	+ Check tolerance
hPa : 1500	+
	†
SV travel mm : 4.0	+ KSB/AFB Volt : 12
Tolerance mm +: 0.4	Detect and all and a 4000
Check tolerance mm + : 0.7	+ Rated speed rpm : 1200
tolerance mm + : 6.7	+ Aneroid pressure + hPa : 1500
KSB/AFB Volt : 12	Overflow quantity
ROD/APB VOCC . 12	- ccm/10s : 97.2
Rated speed rpm : 750	Tolerance
Aneroid pressure	+ ccm/10s + : 41.6
hPa : 1500	1
	theck tolerance
SV travel mm : 1.0	+ ccm/10s +: 41.6
Tolerance mm + : 0.4	+
Check	+ KSB/AFB Volt : 12
tolerance mm +-: 0.7	+
1/00 / A 50 No. 1 A 2	DELIVERY AND BREAKAWAY CHARACTERISTIC
KSB/AFB Volt : 12	Pated speed npm : 1700
	+ Rated speed rpm : 1300

Aneroid pressure		+	
hPa :	1500	+ KSB/AFB Volt :	12
Del. quantity	3r 0	+	
cm3/1000 strokes : Tolerance	75.0	+ Rated speed rpm :	700
cm3/1000 str. +-:	3.0	+ Aneroid pressure + hPa :	7500
CHD/ 1000 SEI, 1 ;	5.0	+ Del. quantity	1300
KSE/AFE Volt :	12	+ cm3/1000 strokes :	114.0
		+ Tolerance	717.0
Rated speed rpm :	1340	+ cm3/1000 str. +-:	2.5
Aneroid pressure		+ Check tolerance	
hPa :	1500	+ cm3/1000s. +-:	4.0
Del. quantity	40.0	+	
cm3/1000 strokes :	12.0	+ KSB/AFB Volt :	12
KSB/AFB Volt :	12	Poted and discourse	950
KSB/AFB Volt :	12	Rated speed rpm : Aneroid pressure	850
Rated speed rpm :	1260	+ hPa :	1500
Aneroid pressure	.235	+ Dei. quantity	1500
hPa :	1500	+ cm3/1000 strokes :	115.0
Del. quantity		+ Tolerance	
cm3/1000 strokes :	100.0	+ cm3/1000 str. +-:	2.5
Check tolerance	5.0	+ Check tolerance	
cm3/10009. + :	5.0	+ cm3/1000s. +-:	4.C
KSB/AFB Volt :	12	T KSB/AFB Volt :	12
1100/A10 VOCC .	12	T ROBIATE VOCE .	12
Rated speed rpm :	1370	+ Rated speed rpm :	550
Aneroid pressure		+ Aneroid pressure	
hPa :	1500	+ hPa :	1500
Del. quantity	A #	+ Del. quantity	447 6
cm3/1000 strokes :	1.5	+ cm3/1000 strokes :	115.0
Tolerance cm3/1000 str. +-:	1.5	+ Tolerance + cm3/1000 str. +-:	4.5
Check tolerance	1.5	+ Check tolerance	4.3
cm3/1000s. +-:	1.5	+ cm3/1000s. +-:	6.0
		+	
KSB/AFB Volt :	12	+ KSB/AFB Volt :	12
	550	†	
Rated speed rpm :	550	+ Rated speed rpm :	1000
Aneroid pressure hPa :	400	+ Aneroid pressure + hPa :	1500
Del. quantity	400	+ nPa : + Del. quantity	1200
cm3/1000 strokes :	81.0	+ cm3/1000 strokes :	108.0
Tolerance		+ Tolerance	100.0
cm3/1000 str. + :	0.5	+ cm3/1000 str. + :	0.5
Check tolerance		+ Check tolerance	
cm3/1000s. +-:	3.0	+ cm3/1000s. +:	2.5
KSB/AFB Volt :	12	<u> </u>	
NOD/AID VOCC .		MECHANICAL SHUTOFF	
Rated speed rpm :	1200	+	
Aneroid pressure		+ Rated speed rpm :	1200
hPa :	1500	+ Aneroid pressure	4.500
Del. quantity	107.0	+ hPa :	1500
cm3/1000 strokes :	103.0	+ Del. quantity	1 5
Tolerance cm3/1000 str. + :	2.5	cm3/1000 strokes : Tolerance	1.5
Check tolerance		cm3/1000 str. +-:	1.5
cm3/1000s. +-:	4.0	+	· • •

Spread

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. +-: 1.5

Spread

cm3/1000 strokes : 5.0

KSB/AFB Volt : 12

IDLE DELIVERY

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 1.5

Tolerance

cm3/1000 str. + : 1.5

Check tolerance

cm3/1000s. + : 1.5

KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 430

Del. quantity

cm3/1000 strokes : 68.0

Tolerance

cm3/1000 str. + : 20.0

KSB/AFB Volt : 12

Rated speed rpm : 330

Del. quantity

cm3/1000 strokes : 90.0

Tolerance

cm3/1000 str. + : 15.0

KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7

Tolerance mm +:+0,1

Dimension KF mm : 6,4

Tolerance mm +:+0,2

MS1 dimension mm : 1,5

Tolerance mm +-:+0,15/-0,1

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 37,4..40,4

Control lever

position YB mm : 35,4..40,6

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08,03,96 Test oil : ISO 4113

: 0 460 424 123 Part no. Pump designation: VE4/12F1200R636-1

Customer-spec. information Customer : MAN

Motor : D 0824 LFL 05

Power KW 114.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance \*C +:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

: 1 688 901 110 assembly

Opening pressure

bar Tolerance bar +-:

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x Length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm 900 Aneroid pressure hPa 1500 Setting mm 2.1 Tolerance mm 0.2 Shutoff solenoid Volt 24

#### SUPPLY PUMP PRESSURE

Rated speed rpm 900 Aneroid pressure hPa 1500 Supply pomp 7.3 pressure bar Tolerance bar + : 0.3 Shutoff solenoid Volt 24

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000 Aneroid pressure hPa 1500 Del. quantity cm3/1000 strokes : 110.0 Tolerance cm3/1000 str. + :Spread cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 4.5 Shutoff solenoid Volt 24

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 550 Del. quantity cm3/1000 strokes : 62.5 Tolerance cm3/1000 str. + : Shutoff solenoid 24 Volt Check tolerance cm3/1000s. 4.5

#### IDLE SETTING

Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 14.5 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt 24

Spread			+ Aneroid pressure
cm3/1000 strokes	:	6.0	+ hPa : 1500
Check tolerance		<i>,</i> -	†
cm3/1000s.	:	6.5	+ SV travel mm : 4.9
			+ Tolerance mm +-: 0.4 + Check
			tolerance mm +: 0.4
			+ Shutoff solenoid
FULL-LOAD SPEED R	EGUL	ATION	+ Volt : 24
			+
Rated speed rpm	:	1340	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
Pressure hPa	:	1500	1202
Del. quantity cm3/1000 strokes		75.0	Rated speed rpm : 1200 Aneroid pressure
Tolerance	•	75.0	+ hPa : 1500
cm3/1000 str. +	:	2.0	Supply pomp
Shutoff solenoid			pressure bar : 8.8
Volt	:	24	Tolerance bar +-: 0.3
			- Shutoff solenoid
STARTING FUEL DEL	IVER	Y	+ Volt : 24
Rated speed rpm	:	100	Rated speed rpm : 550
Del. quantity	•	100	Aneroid pressure
cm3/1000 strokes	:	115.0	+ hPa : 1500
Tolerance			+ Supply pomp
cm3/1000 str. +	:	25.0	+ pressure bar : 5.5
Shutoff solenoid		2/	† Tolerance bar + : 0.3
Volt	:	24	+ Shutoff solenoid + Volt : 24
			- VOLE : 24
			<b>→</b>
			+ OVERFLOW QUANTITY
			+
THE FOUND TO THE TENT		DECTACATIONS	Rated speed rpm : 550
INJECTION-PUMP TE	ST S	PECIFICATIONS	Rated speed rpm : 550 Overflow quantity
			Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8
INJECTION-PUMP TE			Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance
TIMING DEVICE CHA			Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8
TIMING DEVICE CHAPTER Rated speed rpm Aneroid pressure		ERISTIC 1050	Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance
TIMING DEVICE CHAP		ERISTIC	Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2 Check tolerance ccm/10s +-: 22.2
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hPa		ERISTIC 1050 1500	Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2 Check tolerance ccm/10s +-: 22.2 Shutoff solenoid
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hPa SV travel mm		ERISTIC 1050 1500 3.7	Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2 Check tolerance ccm/10s +-: 22.2
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm +		ERISTIC 1050 1500	Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2 Check tolerance ccm/10s +-: 22.2 Shutoff solenoid Volt : 24
TIMING DEVICE CHAP Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm + Check		ERISTIC 1050 1500 3.7 0.4	Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2 Check tolerance ccm/10s +-: 22.2 Shutoff solenoid Volt : 24  Rated speed rpm : 1200
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm +		ERISTIC 1050 1500 3.7	Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2 Check tolerance ccm/10s +-: 22.2 Shutoff solenoid Volt : 24
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm +		ERISTIC 1050 1500 3.7 0.4	Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2 Check tolerance ccm/10s + : 22.2 Shutoff solenoid Volt : 24  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Overflow quantity
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt	RACT	ERISTIC 1050 1500 3.7 0.4 0.7	Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2 Shutoff solenoid Volt : 24  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Overflow quantity ccm/10s : 97.2
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm	RACT	1050 1500 3.7 0.4 0.7	Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2 Check tolerance ccm/10s + : 22.2 Shutoff solenoid Volt : 24  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Overflow quantity ccm/10s : 97.2 Tolerance
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure	RACT	ERISTIC 1050 1500 3.7 0.4 0.7 24	Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2 Shutoff solenoid Volt : 24  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Overflow quantity ccm/10s : 97.2
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm	RACT	ERISTIC 1050 1500 3.7 0.4 0.7	Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2 Check tolerance ccm/10s +-: 22.2 Shutoff solenoid Volt : 24  Rated speed rpm : 1200 Ameroid pressure hPa : 1500 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +-: 41.6
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure	RACT	ERISTIC 1050 1500 3.7 0.4 0.7 24	Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2 Check tolerance ccm/10s + : 22.2 Shutoff solenoid Volt : 24  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Overflow quantity ccm/10s : 97.2 Tolerance
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +	RACT	ERISTIC 1050 1500 3.7 0.4 0.7 24 800 1500	Rated speed rpm : 550  Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s +: 22.2  Check tolerance ccm/10s +: 22.2  Shutoff solenoid Volt : 24  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Overflow quantity ccm/10s : 97.2  Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 41.6  Shutoff solenoid
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check	RACT	ERISTIC 1050 1500 3.7 0.4 0.7 24 800 1500 0.9 0.4	Rated speed rpm : 550  Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Check tolerance mm +	RACT	ERISTIC 1050 1500 3.7 0.4 0.7 24 800 1500 0.9	Rated speed rpm : 550  Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s +-: 22.2  Check tolerance ccm/10s +-: 22.2  Shutoff solenoid Volt : 24  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Overflow quantity ccm/10s : 97.2  Tolerance ccm/10s +-: 41.6  Check tolerance ccm/10s +-: 41.6  Shutoff solenoid Volt : 24
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid	RACT	ERISTIC 1050 1500 3.7 0.4 0.7 24 800 1500 0.9 0.4 0.7	Rated speed rpm : 550  Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s +: 22.2  Check tolerance ccm/10s +: 22.2  Shutoff solenoid Volt : 24  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Overflow quantity ccm/10s : 97.2  Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 41.6  Shutoff solenoid
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Check tolerance mm +	RACT	ERISTIC 1050 1500 3.7 0.4 0.7 24 800 1500 0.9 0.4	Rated speed rpm : 550 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +: 22.2  Check tolerance ccm/10s +: 22.2 Shutoff solenoid Volt : 24  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 41.6  Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid	RACT	ERISTIC 1050 1500 3.7 0.4 0.7 24 800 1500 0.9 0.4 0.7	Rated speed rpm : 550  Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s +-: 22.2  Check tolerance ccm/10s +-: 22.2  Shutoff solenoid Volt : 24  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Overflow quantity ccm/10s : 97.2  Tolerance ccm/10s +-: 41.6  Check tolerance ccm/10s +-: 41.6  Shutoff solenoid Volt : 24

Aneroid pressure		+ Check tolerance	
hPa : Del. quantity	1500	cm3/1000s. +-: Shutoff solenoid	3.5
cm3/1000 strokes : Tolerance	75.0	Volt :	24
cm3/1000 str. +-: Shutoff solenoic	2.0	Rated speed rpm : Aneroid pressure	1200
Volt :	24	hPa : Del. quantity	1500
Rated speed rpm : Aneroid pressure	1410	cm3/1000 strokes :	106.0
hPa : Del. quantity	1500	cm3/1000 str. + : Check tolerance	2.5
cm3/1000 strokes : Shutoff solenoid	7.5	cm3/1000s. +-: Shutoff solenoid	4.0
Volt :	24	Volt :	24
Rated speed rpm : Aneroid pressure	1220	Rated speed rpm : Aneroid pressure	700
hPa : Del. quantity	1500	hPa : Del. quantity	1500
cm3/1000 strokes : Check tolerance	106.0	cm3/1000 strokes : Tolerance	116.0
cm3/1000s. + : Shutoff solenoid	5.0	cm3/1000 str. + : Check tolerance	2.5
Volt :	24	cm3/1000s. +-: Shutoff solenoid	4.0
Rated speed rpm : Aneroid pressure hPa :	1420	Yolt :	24
Del. quantity	1500	Rated speed rpm : Aneroid pressure	550
cm3/1000 strokes : Tolerance	1.5	hPa : Del. quantity	1500
cm3/1000 str. +-: Check tolerance	1.5	cm3/1000 strokes : Tolerance	121.0
cm3/1000s. +-: Shutoff solenoid	1.5	cm3/1000 str. +-:	4.5
Volt :	24	cm3/1000s. +-: Shutoff solenoid	6.0
Rated speed rpm : Aneroid pressure hPa :	1380	+ Volt :	24
Del. quantity cm3/1000 strokes :	1500 30.0	Rated speed rpm : Aneroid pressure hPa :	1000
Tolerance cm3/1000 str. +:	15.0	Del. quantity cm3/1000 strokes :	1500
Shutoff solenoid Volt :	24	Tolerance	110.0
	550	cm3/1000 str. +: Check tolerance	0.5
Rated speed rpm : Aneroid pressure hPa :		cm3/1000s. +-: Shutoff solenoid	2.5
LDA/	500	Volt :	24
HBA stroke mm : Del. quantity	7.8	ELECTR CHUTOE	
cm3/1000 strokes : Tolerance	99.0	ELECTR. SHUTOFF CONTROL LEVER, IDLE S	СТОР
cm3/1000 str. +-:	0.5	Rated speed rpm :	400

Del. quantity			1	
cm3/1000 strokes Tolerance	:	1.5	1	ASSEMBLY AND ADJUSTMENT DIMENSION
cm3/1000 str. +- Check tolerance	:	1.5	+	ASSEMBLE AND ADDOSTRIENT DIRENSION
cm3/1000s. +-	:	1.5	‡	LDA/
cm3/1000 strokes	:	5.0	+	HBA stroke mm : 7.8  Dimension K mm : 5,7
FULL-LOAD STOP CON	NTROL	LEVER	Ī	Tolerance mm + : +-0,1 Dimension KF mm : 6,4 Tolerance mm + : +-0,2
Rated speed rpm Del. quantity	:	400	1	Dimension MS mm : 1,2 Tolerance mm + : +-0,2
cm3/1000 strokes Tolerance	:	1.5	$\frac{1}{1}$	Total diffe dish 1 . 1-0/2
cm3/1000 str. +- Spread	:	1.5	1	CONTROL LEVER POSITION
cm3/1000 strokes Check tolerance	:	5.0	İ	SET
cm3/1000s. +- Spread	:	1.5	+	Control lever spacing
cm3/1000 strokes	:	5.0	+	Xl mm : 12.60 Control lever
IDLE DELIVERY		-	Ŧ	spacing Xk mm : 21.00
Rated speed rpm Del. quantity	•	500	‡	Control lever
cm3/1000 strokes Tolerance		1.5	+	position YA mm : 37,440,4
cm3/1000 str. +- Check tolerance	:	1.5	+	Control lever position YB mm : 41,947,1
cm3/1000s. +- Shutoff solenoid	:	1.5	‡	
Volt	•	24	‡	
			1	End of test-specification sheet
			‡	
START TRANSITION			‡	
Rated speed rpm	:	250	1	
Del. quantity cm3/1000 strokes		30.0	1	
Tolerance cm3/1000 str. +-		20.0	$\frac{1}{1}$	
Shutoff solenoid Volt	•	24	Ŧ	
VOCE	•	<b>64</b>	Ŧ	
Rated speed rpm	:	150	‡	
Del. quantity cm3/1000 strokes Tolerance	:	110.0	Ŧ	
cm3/1000 str. +- Shutoff solenoid	:	30.0	Ŧ	
Volt	:	24	Ŧ	
			+	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 31.08.95 Test oil : ISO 4113

: 0 460 424 119 Part no. Pump designation : VE4/12F1100R644

Customer-spec. information Customer : CASE

: 4 T-390/788 Motor Power KW 70.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance \*C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

bar Tolerance bar +-:

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,8 Outlet : A

Prestroke

(as of UT) max = 0.3Tolerance mm +:+0.02

Check

tolerance mm +:+0.04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm 2.1 Tolerance mm +: 0.2

Shutoff solenoid

Volt 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 800 Supply pomp

pressure bar 6.9 Tolerance bar +-: 0.3

Shutoff solenoid

Volt 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 900 Del. quantity

cm3/1000 strokes : 68.0

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes : 4.0

Shutoff solenoid

Volt 24

IDLE SETTING

Rated speed rpm : 425

Del. quantity

cm3/1000 strokes : 9.0

Tolerance

cm3/1000 str. + :3.0

Shutoff solenoid

Volt 24

Spread

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s.7.0

FULL-LOAD SPEED REGULATION	Shutoff solenoid : 24
Rated speed rpm : 1160 - Del. quantity -	OVERFLOW QUANTITY
cm3/1000 strokes : 42.0 -	Rated speed rpm : 1100 Overflow quantity
cm3/1000 str. + : 3.0 - Shutoff solenoid	ccm/10s : 85.7
Volt : 24	ccm/10s + : 27.7
STARTING FUEL DELIVERY	Check tolerance ccm/10s +: 27.7
Rated speed rpm : 100 - Del. quantity -	Shutoff solenoid
cm3/1000 strokes : 90.0 - Tolerance -	
cm3/1000 str. + : 20.0	Rated speed rpm : 500 Overflow quantity
Shutoff solenoid - Volt : 24 -	ccm/10s : 63.8 Tolerance
	ccm/10s +: 22.2
-	Check tolerance ccm/10s + : 22.2 Shutoff solenoid
INJECTION—PUMP TEST SPECIFICATIONS -	+ Volt : 24
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 1100	Rated speed rpm : 1160  Del. quantity
SV travel mm : 3.8 Tolerance mm +-: 0.4	cm3/1000 strokes : 42.0 Tolerance
Check tolerance mm + : 0.7	cm3/1000 str. + : 3.0 Check tolerance
Shutoff solenoid Volt : 24	cm3/1000s. +-: 6.0 Shutoff solenoid
Rated speed rpm : 500	Volt : 24
SV travel mm : 0.5	Rated speed rpm : 1200
Tolerance mm + : 0.4 Check	Del. quantity cm3/1000 strokes : 32.5 Check tolerance
tolerance mm +: 0.7 Shutoff solenoid	cm3/1000s. +-: 8.0  Shutoff solenoid
Volt : 24	Volt : 24
SUPPLY PUMP PRESSURE CHARACTERISTIC	Rated speed rpm : 1240 Del. quantity
Rated speed rpm : 1100 - Supply pomp	cm3/1000 strokes : 1.5 Tolerance
pressure bar : 8.2	cm3/1000 str. +: 1.5
Tolerance bar + : 0.3 Shutoff solenoid	Check tolerance cm3/1000s. +-: 1.5
Volt : 24	- Shutoff solenoid - Volt : 24
Rated speed rpm : 500 - Supply pomp -	Rated speed rpm : 1100
pressure bar : 5.6 Tolerance bar +-: 0.3	- Del. quantity - cm3/1000 strokes : 67.0

Tolerance		4	+	Spread		
cm3/1000 str. +-: Check tolerance	1.5	j	t	cm3/1000 strokes Check tolerance	:	5.0
cm3/1000s. + :	3.0	-		cm3/1000s. +-	:	1.5
Shutoff solenoid Volt :	24	-	+	Spread cm3/1000 strokes	:	5.0
Rated speed rpm :	750	-	+	IDLE DELIVERY		
Del. quantity cm3/1000 strokes : Tolerance	70.0	1	Ī	Rated speed rpm Del. quantity	:	500
cm3/1000 str. +-:	2.0		-	cm3/1000 strokes	:	2.0
Check tolerance cm3/1000s. +-: Shutoff solenoid	4.0	•	-	Tolerance cm3/1000 str. +-	:	2.0
Volt :	24			Check tolerance cm3/1000s. +- Shutoff solenoid	:	2.0
Rated speed rpm : Del. quantity	500			Volt	:	24
cm3/1000 strokes : Tolerance	32.0			Rated speed rpm Del. quantity	:	350
cm3/1000 str. +-: Check tolerance	4.0			cm3/1000 strokes Tolerance	:	18.0
cm3/1000s. + : Shutoff solenoid	6.0		E	cm3/1000 str. +- Shutoff solenoid	:	8.0
Volt :	24		F	Volt	:	24
Rated speed rpm : Del. quantity	900			Rated speed rpm Del. quantity	:	375
cm3/1000 strokes : Tolerance	68.0			cm3/1000 strokes Tolerance	:	15.0
cm3/1000 str. + : Check tolerance	0.5		F	cm3/1000 str. +- Shutoff solenoid	:	8.0
cm3/1000s. +-: Shutoff solenoid	3.0			Volt	:	24
Volt :	24			Rated speed rpm Del. quantity	:	400
			F	cm3/1000 strokes Tolerance	:	12.0
ELECTR. SHUTOFF CONTROL LEVER, IDLE S	TOP		-	cm3/1000 str. + Shutoff solenoid	:	6.0
		-	-	Volt	:	24
Rated speed rpm : Del. quantity	500	-	-			
cm3/1000 strokes : Tolerance	1.5	1				
cm3/1000 str. +-: Check tolerance	1.5					
cm3/1000s. +-: Spread	1.5			START TRANSITION		
cm3/1000 strokes :	5.0			Rated speed rpm Del. quantity	:	300
FULL-LOAD STOP CONTROL	L LEVER		_	cm3/1000 strokes Tolerance	:	72.0
Rated speed rpm : Del. quantity	500		<u>-</u>	cm3/1000 str. +- Shutoff solenoid	:	8.0
cm3/1000 strokes : Tolerance	1.5	1	-	Volt	:	24
cm3/1000 str. +:	1.5	‡	-	Rated speed rpm	:	130

Del. quantity cm3/1000 strokes : 98.0

Tolerance cm3/1000 str. +: 25.0

Shutoff solenoid

Volt 24

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension KF mm : 5,2
Tolerance mm + : +-C,2
MS1 dimension mm : 1,5
Tolerance mm + : +0,15/-0,1

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 23.06.95 Test oil : ISO 4113

Part no. : 0 460 484 103 Pump designation : VE4/8F2300R652

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 646
Power KW : 45.0

#### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C : 45 Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7 Tolerance mm + : 0.2 Shutoff solenoid

Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Supply pomp

pressure bar : 5.4
Tolerance bar + : 0.3
Shutoff solenoid

Volt : 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 31.5

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 3.0

Tolerance

cm3/1000 str. +-: 2.0

Shutoff solenoid

Volt : 12

#### IDLE DELIVERY

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 9.5

Tolerance

cm3/1000 str. + : 2.0

Spread

cm3/1000 strokes : 2.5 Shutoff solenoid

12

Volt :

#### HIGH IDLE SETTING

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 9.0

Tolerance cm3/1000 str. +-	·: 2.0	†
Shutoff solenoid	-	INJECTION-PUMP TEST SPECIFICATIONS
Volt	: 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED R	-	Rated speed rpm : 2000
Rated speed rpm Del. quantity	: 2450 -	SV travel mm : 6.1
cm3/1000 strokes Tolerance	: 24.5	Tolerance mm + : 0.4 Check
cm3/1000 str. +- Shutoff solenoid	: 3.0	tolerance mm + : 0.6 Shutoff solenoid
Volt	: 12 -	Volt : 12
STARTING FUEL DEL	IVERY -	Rated speed rpm : 600
Rated speed rpm Del. quantity	-	SV travel mm : 1.2 Tolerance mm + : 0.4
cm3/1000 strokes Tolerance	-	Check tolerance mm + : 0.6
cm3/1000 str. +- Shutoff solenoid	-	Shutoff solenoid Volt : 12
Volt	: 12 -	SUPPLY PUMP PRESSURE CHARACTERISTIC
LOAD DEDENINENT OF	ADT OF BELTUEDY	Rated speed rpm : 2000
LOAD-DEPENDENT STA	ART OF DELIVERY -	Supply pomp pressure bar : 7.5
DELIVERY DIFFEREN	CE -	Tolerance bar +-: 0.3 Shutoff solenoid
Rated speed rpm	: 1250	Yolt : 12
Del. quantity cm3/1000 strokes	: -7.0	Rated speed rpm : 600 Supply pcmp
Tolerance cm3/1000 str. +-	: 1.0	pressure bar : 3.6 Toterance bar + : 0.3
Shutoff solenoid Volt	: 12	Shutoff solenoid Volt : 12
PRESSURE DIFFEREN	CE -	OVERFLOW QUANTITY
Rated speed rpm Del. quantity	: 1250	Rated speed rpm : 2250 Overflow quantity
cm3/1000 strokes Tolerance	: -0.2	ccm/10s : 97.2 Tolerance
cm3/1000 str. +- Shutoff solenoid	: 0.1	ccm/10s +-: 41.6
Volt	: 12	Check tolerance ccm/10s +-: 41.6
TIMING-DEVICE TRAN	VEL DIFFERENCE	Shutoff solenoid Volt : 12
Rated speed rpm Del. quantity	: 1250	Rated speed rpm : 600
cm3/1000 strokes Tolerance	: -0.7	- Nated speed rpm : 600 - Overflow quantity - ccm/10s : 63.8
cm3/1000 str. +-	: 0.1	Tolerance
Shutoff solenoid Volt	: 12	- ccm/10s +: 22.2

	1	Tolerance
Check tolerance	$\mathbf{I}$	cm3/1000 str. +-: 1.0
ccm/10s +:	22.2	Check tolerance
Shutoff solenoid	1	cm3/1000s. +-: 2.3
Volt :	12	Shutoff solenoid
	+	Volt : 12
DELIVERY AND BREAKA	WAY CHARACTERISTIC +	
	†	Rated speed rpm : 600
Rated speed rpm :	2450	Del. quantity
Del. quantity cm3/1000 strokes :	3/ 5	cm3/1000 strokes : 31.9
Tolerance	24.5	Tolerance
cm3/1000 str. +:	3.0	cm3/1000 str. + : 1.5 Check tolerance
Check tolerance	I	cm3/1000s. +-: 2.3
cm3/1000s. +:	4.0	Shutoff solenoid
Shutoff solenoid	1	Volt : 12
Volt :	12	1 12
	<del>,</del>	Rated speed rpm : 1250
Rated speed rpm :	2650	Del. quantity
Del. quantity	+	cm3/1000 strokes : 31.5
cm3/1000 strokes :	9.5	Tolerance
Check tolerance	<u> </u>	cm3/1000 str. + : 0.5
cm3/1000s. +=:	5.0	Check tolerance
Shutoff solenoid Volt	1.2	cm3/1000s. +: 2.3
Volt :	12	Shutoff solenoid Volt : 12
Rated speed rpm :	2950	: 12
Del. quantity		
cm3/1000 strokes :	2.5	
CRO/TOOU SCHOKES :	4.3	
Tolerance	2.3	ELECTR. SHUTOFF
	+	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
Tolerance cm3/1000 str. + : Check tolerance	2.5	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	2.5	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410
Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid	2.5	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity
Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	2.5	©ONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5
Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :	2.5	©ONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance
Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt : Rated speed rpm :	2.5	©ONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. + : 1.5
Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt : Rated speed rpm : Del. quantity	2.5 2.5 12 2250	©ONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. + : 1.5  Check tolerance
Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strakes :	2.5 2.5 12 2250	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5
Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance	2.5 2.5 12 2250 32.1	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread
Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strakes :	2.5 2.5 12 2250 32.1	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5
Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	2.5 2.5 12 2250 32.1	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread
Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid	2.5 2.5 12 2250 32.1 1.0 2.3	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Check tolerance cm3/1000s. + : 1.5  Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER
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# CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE

Rated speed rpm : 1250 Del, quantity cm3/1000 strokes : -9.5 Tolerance cm3/1000 str. ←: 3.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid Volt 12

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm 1250 Del. quantity cm3/1000 strokes : -0.7Tolerance cm3/1000 str. + :0.1 Check tolerance cm3/1000s. 0.1 Shutoff solenoid 12 Volt

#### DELIVERY DIFFERENCE

Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 5.0 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid Volt 12

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : Tolerance mm 0.2 Check tolerance mm 0.3 Shutoff solenoid 12 Volt

#### START TRANSITION

310 Rated speed rpm : Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 10.0 Shutoff solenoid 12 Volt

Rated speed rpm 210

Del. quantity cm3/1000 strokes : 60.0

Tolerance

cm3/1000 str. +-: 15.0

Shutoff solenoid

Volt 12

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm +-: +-0,1 Dimension KF mm : 5,4 Tolerance mm + : +-0,2 Dimension MS mm : 1,3 Tolerance mm +-:+-0,2

**MICROSWITCH** 

SET

: 0,8..3,0

: 16,2..17,0

CONTROL LEVER POSITION

SET

Control Lever

: 30,3..34,3 position YA mm

Control Lever

: 64,1..76,4 position YB mm

End of test-specification sheet

003

#### Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 23.06.95 Test oil : ISO 4113

Part no. : 0 460 484 104 Pump designation : VE4/8F2300R652-1

Customer—spec. information Customer : RENAULT Motor : F8Q - 646 Power KW : 45.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.65

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

#### REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0 Outlet : A

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Supply pomp
pressure bar : 5.4
Tolerance bar + : 0.3
Shutoff solenoid
Volt : 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 str. + : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 str. +-: 2.0
Shutoff solenoid
Volt : 12

# IDLE DELIVERY

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 9.5
Tolerance
cm3/1000 str. +- : 2.0
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

		+ Del. quantity
HIGH IDLE SETTING		cm3/1000 strokes : -0.7 Tolerance
Rated speed rpm Del. quantity	: 500	cm3/1000 str. +: 0.1 Shutoff solenoid
cm3/1000 strokes	: 9.0	+ Volt : 12
Tolerance cm3/1000 str. +	: 2.0	
Shutoff solenoid Volt	: 12	INJECTION-PUMP TEST SPECIFICATIONS
FULL-LOAD SPEED RE	EGULATION	TIMING DEVICE CHARACTERISTIC
Rated speed rpm	: 2450	Rated speed rpm : 2000
Del. quantity cm3/1000 strokes	: 24.5	SV travel mm : 6.1 Tolerance mm + : 0.4
Tolerance cm3/1000 str. +-	: 3.0	tolerance mm: +-: 0.6
Shutoff solenoid Volt	: 12	+ Shutoff solenoid + Volt : 12
STARTING FUEL DEL	IVERY	Rated speed rpm : 600
Rated speed rpm	: 100	+ SV travel mm : 1.2
Del. quantity cm3/1000 strokes	: 55.0	+ Tolerance mm +-: 0.4 + Check
Tolerance cm3/1000 str. +-		tolerance mm +-: 0.6 Shutoff solenoid
Shutoff solenoid Volt		Volt : 12
Voct	. 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
LOAD-DEPENDENT STA	ART OF NELTWERY	Rated speed rpm : 2000 Supply pomp
SETTING	ANT OF PELLIPER!	+ pressure bar : 7.5
DELIVERY DIFFEREN	CE	Tolerance bar + : 0.3 Shutoff solenoid
Rated speed rpm	: 1250	+ Volt : 12
Del. quantity cm3/1000 strokes	: -7.0	+ Rated speed rpm : 600 + Supply pomp
Tolerance cm3/1000 str. +-	: 1.0	+ pressure bar : 3.6 + Tolerance bar +-: 0.3
Shutoff solenoid Volt	: 12	Shutoff solenoid Volt : 12
PRESSURE DIFFERENCE	CE	OVERFLOW QUANTITY
Rated speed rpm	: 1250	Rated speed rpm : 2250
Del. quantity cm3/1000 strokes	: -0.2	Overflow quantity : 97.2
Tolerance cm3/1000 str. +-	: 0.1	Tolerance + : 41.6
Shutoff solenoid Volt	: 12	Check tolerance
TIMING-DEVICE TRAV	UEL DIEFERNAT	+ ccm/10s + : 41.6 + Shutoff solenoid
72/12/12 00/12/00 11/01/	VEL DIFFERENCE	
Rated speed rpm	: 1250	+ Volt : 12

Overflow quantity		+ Ráted speed rpm : 2000	
ccm/10s	63.8	+ Del. quantity	
Tolerance		+ cm3/1000 strokes : 32.5	
ccm/10s +- :	22.2	+ Tolerance	
		+ cm3/1000 str. +-: 1.0	
Check tolerance		+ Check tolerance	
ccm/10s +- :	22.2	+ cm3/1000s. $+$ : 2.3	
Shutoff solenoid		+ Shutoff solenoid	
Volt :	12	+ Volt : 12	
		+	
DELIVERY AND BREAKA	WAY CHARACTERIST	IC + Rated speed rpm : 600	
		+ Del. quantity	
	2450	+ cm3/1000 strokes : 31.9	
Del. quantity	<b>.</b>	Tolerance	
cm3/1000 strokes :	24.5	+ cm3/1000 str. +-: 1.5	
Tolerance		+ Check tolerance	
cm3/1000 str. +:	3.0	+ cm3/1000s. + : 2.3	
Check tolerance		+ Shutoff solenoid	
cm3/1000s. +-:	4.0	† Volt : 12	
Shutoff solenoid	4.0	†	
Volt :	12	+ Rated speed rpm : 1250	
Detect aread	2/50	+ Del. quantity	
Rated speed rpm : Del. quantity	2030	+ cm3/1000 strokes : 31.5	
cm3/1000 strokes :	9.5	† Tolerance	
Check tolerance	7.3	+ cm3/1000 str. +: 0.5 + Check tolerance	
cm3/1000s. +-:	5.0	+ cm3/1000s. + : 2.3	
Shutoff solenoid	J.0	+ Shutoff solenoid	
Volt :	12	1	
	16	1 Volt : 12	
Rated speed rpm :	2950	1	
Del. quantity			
cm3/1000 strokes :	2.5	ELECTR. SHUTOFF	
	2.5	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	
cm3/1000 strokes :		ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	
cm3/1000 strokes : Tolerance			
<pre>cm3/1000 strokes : Tolerance cm3/1000 str. + :</pre>	2.5	CONTROL LEVER, IDLE STOP	
<pre>cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance</pre>	2.5	CONTROL LEVER, IDLE STOP Rated speed rpm : 410	
cm3/1000 strokes: Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	2.5	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:	2.5 2.5 12	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. +-: 1.5	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt: Rated speed rpm:	2.5 2.5 12	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. + : 1.5  Check tolerance	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt: Rated speed rpm: Del. quantity	2.5 2.5 12 2250	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. + : 1.5  Check tolerance  cm3/1000s. + : 1.5	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt: Rated speed rpm Del. quantity cm3/1000 strokes:	2.5 2.5 12 2250	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. + : 1.5  Check tolerance  cm3/1000s. + : 1.5  Spread	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt: Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance	2.5 2.5 12 2250 32.1	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. + : 1.5  Check tolerance  cm3/1000s. + : 1.5	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt: Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +:	2.5 2.5 12 2250 32.1	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt: Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance	2.5 2.5 12 2250 32.1 1.0	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. + : 1.5  Check tolerance  cm3/1000s. + : 1.5  Spread	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	2.5 2.5 12 2250 32.1 1.0	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid	2.5 2.5 12 2250 32.1 1.0 2.3	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Check tolerance cm3/1000s. + : 1.5  Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	2.5 2.5 12 2250 32.1 1.0	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:	2.5 2.5 12 2250 32.1 1.0 2.3	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm:	2.5 2.5 12 2250 32.1 1.0 2.3	Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:	2.5 2.5 12 2250 32.1 1.0 2.3 12	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5	
cm3/1000 strokes Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance	2.5 2.5 12 2250 32.1 1.0 2.3 12 1625 31.0	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes:	2.5 2.5 12 2250 32.1 1.0 2.3 12 1625 31.0	Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance	
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance	2.5 2.5 12 2250 32.1 1.0 2.3 12 1625 31.0 1.5	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0	
cm3/1000 strokes Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000s. +: Check tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	2.5 2.5 12 2250 32.1 1.0 2.3 12 1625 31.0 1.5	Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000str. + : 1.5 Check tolerance cm3/1000s + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread	
cm3/1000 strokes Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000s. +: Check tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	2.5 2.5 12 2250 32.1 1.0 2.3 12 1625 31.0 1.5 2.3	Rated speed rpm : 410  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5	
cm3/1000 strokes Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm Del. quantity cm3/1000s. +: Check tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	2.5 2.5 12 2250 32.1 1.0 2.3 12 1625 31.0 1.5	Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000str. + : 1.5 Check tolerance cm3/1000s + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread	
cm3/1000 strokes Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000s. +: Check tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	2.5 2.5 12 2250 32.1 1.0 2.3 12 1625 31.0 1.5 2.3	Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000str. + : 1.5 Check tolerance cm3/1000s + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread	

CHECKING LOAD-DEP START OF DELIVERY		
DELIVERY DIFFEREN	CE	
Rated speed rpm Del. quantity	: 1250	
cm3/1000 strokes Tolerance	: -9.5	
cm3/1000 str. +- Check tolerance	: 3.0	
cm3/1000s. +- Shutoff solenoid	: 3.0	
Volt	: 12	
TIMING-DEVICE TRA	VEL DIFFERENCE	
Rated speed rpm Del. quantity	: 1250	
cm3/1000 strokes Tolerance	: -0.7	
cm3/1000 str. +- Check tolerance	: 0.1	
cm3/1000s. +- Shutoff solenoid	: 0.1	
Volt	: 12	
DELIVERY DIFFEREN	CE	
Rated speed rpm Del. quantity	: 1250	
cm3/1000 strokes Tolerance	: 5.0	
cm3/1000 str. +- Check tolerance	: 3.0	
cm3/1000s. +- Shutoff solenoid	: 3.0	
Volt	: 12	
TIMING-DEVICE TRA	VEL DIFFERENCE	
Rated speed rpm Tolerance mm +-	: 1250 : 0.2	
Check tolerance mm +-		
Shutoff solenoid Volt	: 12	
START TRANSITION		
Rated speed rpm Del. quantity	: 310	
cm3/1000 strokes Tolerance	: 35.0	
cm3/1000 str. +-	: 10.0	

Shutoff solenoid Volt : 12 Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0Shutoff solenoid Volt 12 ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : 3,3 Tolerance mm +:+0,1Dimension KF mm : 5,4 Tolerance mm +:+0,2Dimension MS mm : 1,3 Tolerance mm + : +0,2 CONTROL LEVER POSITION SET Control lever position YA mm : 30,3..34,2 Control lever position YB mm : 64,1..76,9

POSCII TALL DUMP THAT OPERATIONS	† TIMING DEVICE TRAVEL
BOSCH INJ. PUMP TEST SPECIFICATIONS	Rated speed rpm : 1000
Note remarks	+ Aneroid pressure
Refer to Service Info for test and	+ hPa : 1000
adjustment instructions.	Setting mm : 1.4
See microcard(s) W400/	+ Tolerance mm +-: 0.1
	+ Shutoff solenoid
Edition : 19.10.95	+ Volt : 24
Fest oil : ISO 4113	T KSB/AFB Volt : 24
Pert no. : 0 450 426 229 Pump designation : VE6/12F135OR674	SUPPLY PUMP PRESSURE
	+ 24
Customer—spec. information	Rated speed rpm : 1000 Aneroid pressure
Customer : IVECO-FIAT	hPa : 1000
ustomer : IVECO-FIAT lotor : 8060.45.5000	+ Supply pomp
Power KW : 105.0	pressure bar : 6.8
	+ Tolerance bar +-: 0.3
	+ Shutoff solenoid
EST BENCH REQUIREMENTS	+ Volt : 24
alibrating-oil eturn	KSB/AFB Volt : 24
emperature °C : 55	+ FULL-LOAD DELIVERY WITH BOOS
olerance °C +-: 1	+
h man film	Rated speed rom : 650
Overflow restriction mm : 0.55	+ Aneroid pressure
restriction mm : 0.55	+ hPa : 1000
	+ Del. quantity + cm3/1000 strokes : 62.5
inlet press. bar : 0.35	Tolerance
olerance bar + : 0.05	+ cm3/1000 str. +-: 0.5
	Spread
	+ cm3/1000 strokes : 3.5
est nozzle holde	+ Check tolerance
ssembly : 1 688 901 C27	+ cm3/1000s. : 5.0
	+ Shuroff solenoid
pening pressure	+ Volt : 24
ar : 250	† WOD (450 ) 1 1 1
olerance bar +-: 3	+ KSB/AFB Volt : 24
	FULL-LOAD DELIV. WITHOUT BOOK
est lines : 1 680 750 073	† Charles Laure
Outside diameter : 6.00	+ Check tolerance + cm3/1000s. : 5.0
atside diduleter . 0.00	T (III)/10003. ; 5.0
inside diameter: 2.00	IDLE SETTING
clength mm : 450	+
	Rated speed rpm : 350
	+ Del. quantity
REMARKS	+ cm3/1000 strokes : 16.5
	+ Tolerance + cm3/1000 str. +-: 2.0
	+ cm3/1000 str. + : 2.0 + Shutoff solenoid
	+ Volt : 24
INJECTION PUMP SETTING VALUES	+ Spread
THE STATE OF THE SET OF THE STATE OF THE SET	+ cm3/1000 strokes : 4.0
	,

TIMING DEVICE TRA	/EL	
Rated speed rpm Aneroid pressure	:	1000
hPa	:	1000
Setting mm Tolerance mm +-	:	1.4 0.1
Shutoff solenoid Volt	:	24
KSB/AFB Volt	:	24
SUPPLY PUMP PRESSE	JRE	
Rated speed rpm Aneroid pressure	:	1000
hPa Supply pomp	:	1000
pressure bar Tolerance bar +- Shutoff solenoid	:	6.8 0.3
Volt	:	24
KSB/AFB Volt	:	24
FULL-LOAD DELIVERY	r W	ITH BOOST PRESSURE
Rated speed rpm Aneroid pressure	:	650
hPa	:	1000
Del. quantity cm3/1000 strokes	:	62.5
Tolerance cm3/1000 str. +-	:	0.5
Spread cm3/1000 strokes	:	3.5
Check tolerance cm3/1000s. Shuroff solenoid	:	5.0
Volt	:	24
KSB/AFB Volt	:	24
FULL-LOAD DELIV. V	VIT	HOUT BOOST PRESSURE
Check tolerance cm3/1000s.	:	5.0
IDLE SETTING		
Rated speed rpm Del. quantity	:	350
	:	16.5
cm3/1000 str. +-	:	2.0

Check tolerance	+ Shutoff solenoid
cm3/1000s. : 5.0	† Volt : 24
ten ten	†
KSB/AFB Volt : 24	+ KSB/AFB Volt : 24
	- Setting point KSB
	Rated speed rpm : 340
	+ Aneroid pressure + hPa : 1000
FULL-LOAD SPEED REGULATION	† hPa : 1000
TOLL EGAD OF LED REGOLATION	SV travel mm : 2.0
Rated speed rpm : 1550	+ Tolerance mm + : 0.2
Pressure hPe : 1000	+ Check
Del. quantity	tolerance mm +-: 0.5
cm3/1000 strokes : 14.0	+ Shutoff solenoid
Tolerance	+ Volt : 24
cm3/1000 str. + : 2.0	+
Shutoff solenoid	+ Rated speed rpm : 470
Volt : 24	+ Aneroid pressure
KSD/AED Volt	+ hPa : 1000
KSB/AFB Volt : 24	† CV +novel no
STARTING FUEL DELIVERY	+ SV travel mm : 3.2 + Tolerance mm +-: 0.6
STARTING FOEL DELIVER!	+ Tolerance mm +-: 0.6 + Check
Rated speed rpm : 100	tolerance mm +: 0.7
Del. quantity	- Shutoff solenoid
cm3/1000 strokes : 58.0	+ Volt : 24
Tolerance	1
cm3/1000 str. + : 25.0	SUPPLY PUMP PRESSURE CHARACTERISTIC
Shutoff solenoid	+
Volt : 24	+ Rated speed rpm : 1100
	+ Aneroid pressure
KSB/AFB Volt : 24	† hPa : 1000
	+ Supply pomp
	pressure bar : 7.3
	+ Tolerance bar +-: 0.3
	+ Shutoff solenoid + Volt : 24
INJECTION—PUMP TEST SPECIFICATIONS	† Volt : 24
THOSE TOTAL CONF. (EQ.) SPECIAL TOTAL TOTAL	KSB/AFB Volt : 24
TIMING DEVICE CHARACTERISTIC	Nobratio vocc . 24
	Rated speed rpm : 500
Rated speed rpm : 1100	+ Aneroid pressure
Aneroid pressure	+ hPa : 1000
hPa : 1000	+ Supply pomp
	+ pressure bar : 3.7
SV travel mm : 2.6	+ Tolerance bar +-: 0.3
Tolerance mm +-: 0.3	+ Shutoff solenoid
Check	+ Volt : 24
tolerance mm + : 0.7	T KODIASO Valt
Shutoff solenoid Volt : 24	+ KSB/AFB Volt : 24
. 24	T OVERFLOW QUANTITY
KSB/AFB Volt : 24	A SAFIVI FOR MOVIALITY
	Rated speed rpm : 1350
Rated speed rpm : 1200	+ Aneroid pressure
Aneroid pressure	+ hPa : 1000
hPa : 1000	+ Overflow quantity
	+ ccm/10s : 97.2
SV travel mm : 3.3	+ Tolerance
Tolerance mm $+-:$ 0.3	+ ccm/10s +: 41.6

Check tolerance		†	Check tolerance cm3/1000s. +-:	1 5
ccm/10s +	: 41.6	I	Shutoff solenoid	1.5
Shutoff solenoid	. 41.0	I	Volt :	24
Volt	: 24	1		LT
		1	KSB/AFB Volt :	24
KSE/AFB Volt	: 24	+		
		+	Rated speed rpm :	1 <b>350</b>
Rated speed rpm	: 500	+	Aneroid pressure	
Aneroid pressure		+	hPa :	1000
hPa	: 1000	+	Del. quantity	
Overflow quantity		†	cm3/1000 strokes :	55.0
ccm/10s Tolerance	: 63.8	†	Tolerance cm3/1000 str. +-:	4.5
ccm/10s +	: 22.2	Ī	Check tolerance	1.5
COM/ 103		I	cm3/1000s. +-:	3.5
Check tolerance		1	Shutoff solenoid	3.5
ccm/10s +-	: 41.6	1	Volt :	24
Shutoff solenoid		+		
Volt	: 24	+	KSB/AFB Volt :	24
	•	+		
KSB/AFB Volt	: 24	†	Rated speed rpm :	500
DELTHEDY AND DOCAL	(AWAY CHARACTERISTIC	†	Aneroid pressure hPa :	1000
DELIVER! AND DREAM	CHARACTERISTIC	Ī	nra : Del. quantity	1000
Rated speed rpm	: 1550	I	cm3/1000 strokes :	63.5
Aneroid pressure		1	Tolerance	03.3
hPa	: 1000	+	cm3/1000 str. +-:	2.0
Del. quantity		+	Check tolerance	
cm3/1000 strokes	: 14.0	+	cm3/1000s. +-:	3.5
Tolerance	2.0	+	Shutoff solenoid	_,
cm3/1000 str. +- Check tolerance	: 2.0	†	Volt :	24
cm3/1000s. +-	: 6.0	I	KSB/AFB Volt :	24
Shutoff solenoid	. 0.0	I	RSB/AID VOLL .	24
Volt	: 24	1	Rated speed rpm :	650
		Ì	Aneroid pressure	
KSB/AFB Volt	: 24	+	hPa :	1000
	4.5.5	+	Del. quantity	
Rated speed rpm	: 1500	+	cm3/1000 strokes :	62.5
Aneroid pressure hPa	: 1000	†	Tolerance	0.5
Del. quantity	7000	Ī	cm3/1000 str. +-: Check tolerance	0.5
cm3/1000 strokes	: 39.0	I	cm3/1000s. +-:	3.5
Tolerance	7 37,0	1	Shutoff solenoid	3.5
cm3/1000 str. +	: 6.0	1	Volt :	24
Check tolerance		+		
cm3/1000s. +-	: 10.0	t	Rated speed rpm :	500
Shutoff solenoid	3/	†	Aneroid pressure	
Volt	: 24	<b>†</b>	hPa : Tolerance	80
KSB/AFB Volt	: 24	I	cm3/1000 str. +-:	0.5
HOUTH D FOLL	. 67	1	Check tolerance	ر.ں
Rated speed rpm	: 1600	1	cm3/1000s. +-:	0.5
Aneroid pressure		<b>†</b>	Check tolerance	
hPa	: 1000	+	cm3/1000s. +-:	0.5
Del. quantity	A P	+	Shutoff solenoid	= 4
cm3/1000 strokes	: 1.5	†	Volt :	24
Tolerance cm3/1000 str. +-	: 1.5	I	KSB/AFB Volt :	24
omer food ser, +-	. 1.2	T	NOD/AID VOLL :	24

Rated speed rpm : 500 Aneroid pressure hPa : 220 Del. quantity cm3/1000 strokes : 11.0 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Shutoff solenoid Volt : 24  KSB/AFB Volt : 24	Del. quantity cm3/1000 strokes : 41.5 Tolerance cm3/1000 str. + : 2.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid Volt : 24  KSB/AFB Volt : 24
ELECTR. SHUTOFF	START TRANSITION
CONTROL LEVER, IDLE STOP	+ Rated speed rpm : 230
	+ Del. quantity
Rated speed rpm : 350	+ cm3/1000 strokes : 60.0
Del. quantity cm3/1000 strokes : 1.5	+ Tolerance + cm3/1000 str. +: 10.0
Tolerance	+ Shutoff solenoid
cm3/1000 str. +-: 1.5	+ Volt : 24
Check tolerance	+
cm3/1000s. +-: 1.5	+ KSB/AFB Volt : 24
Spread	†
cm3/1000 strokes : 5.0	Rated speed rpm : 140
FULL-LOAD STOP CONTROL LEVER	+ Del. quantity + cm3/1000 strokes : 100.0
Rated speed rpm : 350	+ Tolerance
Del. quantity	- cn3/1000 str. + : 25.0
cm3/1000 strokes : 1.5	+ Shutoff solenoid
Tolerance	+ Volt : 24
cm3/1000 str. +-: 1.5 Spread	T KSP/AFP Vol+
cm3/1000 strokes : 5.0	+ KSB/AFB Volt : 24
Check tolerance	
cm3/1000s. + : 1.5	+ ASSEMBLY AND ADJUSTMENT DIMENSIONS
Spread	+
cm3/1000 strokes : 5.0	+ Dimension K mm : 3,6
YN E NEI TVEDY	Tolerance mm +: +-0,1
IDLE DELIVERY	+ Dimension KF mm : 6,0 + Tolerance mm + : +-0,2
Rated speed rpm : 425	+ MS1 dimension mm : 1,3
Del. quantity	+ Tolerance mm + : +0,15/-0,1
cm3/1000 strokes : 1.5	+ KSB travel mm : 10,0
Tolerance	†
cm3/1000 str. +-: 1.5 Check tolerance	†
cm3/1000s. +-: 1.5	CONTROL LEVER POSITION
Shutoff solenoid	+ SET
Volt : 24	+
	+
KSB/AFB Volt : 24	+ Control lever
Pated speed now . ZOO	position YA mm : 37,939,9
Rated speed rpm : 300	Ť

Control lever	
position YB mm	: 42,147,3

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BOSCH INJ. PUMP TEST SPECIFICATIONS	+ Shutoff solenoid + Volt : 12
Note remarks	SUPPLY PUMP PRESSURE
Refer to Service Info for test and adjustment instructions.	+ Rated speed rpm : 1250 + Supply pomp
See microcard(s) W400/	+ pressure bar : 5.3 + Tolerance bar + : 0.3
Edition : 27.09.93 Test oil : ISO 4113	Shutoff solenoid : 12
Part no. : 0 460 494 079 Pump designation : VE4/9F2250R84	FULL-LOAD DELIV. WITHOUT BOOST PRESSURE
	Rated speed rpm : 1500 Del. quantity
Customer-spec. information Customer : PSA	cm3/1000 strokes : 38.0
Motor : XD3 505D	cm3/1000 str. +-: 0.5 Spread
TEST BENCH REQUIREMENTS	cm3/1000 strokes : 2.5 Shutoff solenoid
Overflow	+ Volt : 12
restriction mm : 0.55	IDLE SETTING
Inlet press. bar : 0.35	Rated speed rpm : 400 Del. quantity
Tolerance bar + : 0.05	cm3/1000 strokes : 8.0 Tolerance
Test nozzle holde	cm3/1000 str. +: 2.0 Shutoff solenoid
assembly : 1 688 901 022	+ Volt : 12 + Spread
Opening pressure : 130	cm3/1000 strokes : 2.5 Check tolerance
Tolerance bar + : 3	cm3/1000s. : 3.0
Test lines : 1 680 750 073	†
Outside diameter : 6.00	FULL-LOAD SPEED REGULATION
x inside diameter : 2.00 x length mm : 450	Rated speed rpm : 2325 Del. quantity
	cm3/1000 strokes : 28.5
REMARKS	cm3/1000 str. +: 3.0 Shutoff solenoid
	+ Volt : 12
INJECTION PUMP SETTING VALUES	STARTING FUEL DELIVERY
TIMING DEVICE TRAVEL	Rated speed rpm : 100  Del. quantity
Rated speed rpm : 1250	cm3/1000 strokes : 60.0
Setting mm : 4.0	cm3/1000 str. +-: 15.0 Shutoff solenoid
Tolerance mm +: 0.2	+ Volt : 12

D13

	!
	Rated speed rpm : 2000 Supply pomp
LOAD-DEPENDENT START OF DELIVERY	pressure bar : 7.2
SETTING	+ Tolerance bar + : 0.3
	Shutoff solenoid
DELIVERY DIFFERENCE	Volt : 12
DECITE! DITTERCIACE	T vott . 12
Rated speed rpm : 1250	Rated speed rpm : 700
Del. quantity	Supply pomp
cm3/1000 strokes : -10.0	
Tolerance	1
cm3/1000 str. +: 1.0	+ Tolerance bar + : 0.3
Shutoff solenoid	+ Shutoff solenoid
	+ Volt : 12
Volt : 12	†
	+ OVERFLOW QUANTITY
PRESSURE DIFFERENCE	<b>†</b>
	+ Rated speed rpm : 2200
Rated speed rpm : 1250	+ Overflow quantity
Del. quantity	+ ccm/10s : 97.2
cm3/1000 strokes : -0.2	+ Tolerance
Tolerance Tolerance	+
cm3/1000 str. +-: 0.1	+
Shutoff solenoid	+ Check tolerance
Volt : 12	+   ccm/10s  +   :   41.6
	+ Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE	+ Volt : 12
Rated speed rpm : 1250	+ Rated speed rpm : 600
Del. quantity	+ Overflow quantity
cm3/1000 strokes : -1.0	+ ccm/10s : 62.5
Tolerance	Tolerance
cm3/1000 str. +-: 0.1	+ ccm/10s + : 20.8
Shutoff solenoid	T COM/105 1 20.8
Volt : 12	Check tolerance
, 12	
TALLECTION DUMB TEST SPECIFICATIONS	+ Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	+ Volt : 12
TIMING NEUTCE CHARACTERISTIC	DEL THERM AND PRESENTATION
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
Dated award man . 2000	† D. J. J. J. J. J. J. J. J. J. J. J. J. J.
Rated speed rpm : 2000	+ Rated speed rpm : 2325
2.4	+ Del. quantity
SV travel mm : 8.6	+ cm3/1000 strokes : 28.5
Tolerance mm +-: 0.4	+ Tolerance
Check	+  cm3/1000  str. + + : 3.0
tolerance mm +: 1.0	+ Check tolerance
Shutoff solenoid	+  cm3/1000s. + + : 8.0
Volt : 12	+ Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 800	+
	+ Rated speed rpm : 2450
SV travel mm : 1.2	+ Del. quantity
Tolerance mm +-: 0.4	+ cm3/1000 strokes : 8.5
Check	+ Check tolerance
tolerance mm +-: 1.0	+  cm3/1000s. + + : 8.0
Shutoff solenoid	- Shutoff solenoid
Volt : 12	+ Volt : 12
7 19	1
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Rated speed rpm : 2550

Del. quantity cm3/1000 strokes : Tolerance	1.0	+ Shutoff solenoid + Volt : 12
cm3/1000 str. +-:	1.0	
Check tolerance cm3/1000s. + : Shutoff solenoid	2.0	+ ELECTR. SHUTOFF - CONTROL LEVER, IDLE STOP
Volt :	12	Rated speed rpm : 400
Rated speed rpm : Del. quantity	2200	+ Del. quantity + cm3/1000 strokes : 1.5 - Tolerance
cm3/1000 strokes : Tolerance	40.0	cm3/1000 str. +-: 1.5 Check tolerance
cm3/1000 str. +-: Check tolerance	1.0	cm3/1000s. +: 1.5
cm3/1000s. + : Shutoff solenoid	4.0	IDLE DELIVERY
Volt :	12	+
Rated speed rpm :	2000	Rated speed rpm : 440 Del. quantity
Del. quantity cm3/1000 strokes :	39.5	cm3/1000 strokes : 1.0 Tolerance
Tolerance cm3/1000 str. ← :	1.0	cm3/1000 str. + : 1.0 Check tolerance
Check tolerance cm3/1000s. +-:	4.5	+ cm3/1000s. +-: 1.0 + Shutoff solenoid
Shutoff solenoid Volt :	12	+ Volt : 12
Rated speed rpm :		Rated speed rpm : 350 Del. quantity
Del. quantity cm3/1000 strokes :	37.0	+ cm3/1000 strokes : 28.0
Tolerance		+ Tolerance + cm3/1000 str. +-: 4.0
cm3/1000 str. + : Check tolerance	1.5	+ Check tolerance + cm3/1000s. ++: 8.0
cm3/1000s. +-: Shutoff solenoid	4.5	+ Shutoff solenoid + Volt : 12
Volt :	12	<del>†</del>
Rated speed rpm : Del. quantity	1500	<u> </u>
cm3/1000 strokes : Tolerance	38.0	CHECKING LOAD-DEPENDENT
cm3/1000 str. +-: Check tolerance	0.5	START OF DELIVERY
cm3/1000s. +-: Shutoff solenoid	3.5	DELIVERY DIFFERENCE
Volt :	12	Rated speed rpm : 1250  Del. quantity
MECHANICAL SHUTOFF		cm3/1000 strokes : -20.0
Rated speed rpm :	2200	cm3/1000 str. +: 5.0 Check tolerance
Del. quantity cm3/1000 strokes :	1.5	+ cm3/1000s. +-: 5.0 + Shutoff solenoid
Tolerance cm3/1000 str. +:	1.5	+ Volt : 12
Check tolerance		TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000s. +-:	1.5	Rated speed rpm : 1250

Del. quantity cm3/1000 strokes : -1.0Tollerance cm3/1000 str. + :0.1 Check tolerance cm3/1000s. 0.1 Shutoff solenoid 12 Volt START TRANSITION Rated speed rpm 450 Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid Volt 12 350 Rated speed rom Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid 12 Volt ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : K1 Tolerance mm + : +-0,1 : 5,5 Dimension KF mm Tolerance mm + : +-0,2 Dimension MS mm : 1,1 Tolerance mm + : +-0,2 TLA travel mm CONTROL LEVER POSITION SET Control lever position YA mm : 19,1..23,1 Control lever position YB mm : 66,5..83,5 End of test-specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 27.03.96 Test oil : ISO 4113

Part no. : 0 460 414 118

Pump designation : VE4/11F2250L619

Customer—spec. information
Customer : ROVER
Motor : TCi-em
Power KW : 63.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 55
Tolerance °C + : 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 116

Opening pressure

bar : 207 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,55 Outlet : A

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1000 Aneroid pressure hPa : 1500

Setting mm : 7.4
Tolerance mm +-: 0.2
Shutoff solenoid

Volt :

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Supply pomp
pressure bar : 7.0
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

12

Rated speed rpm 1250 Aneroid pressure hPa 1500 : Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. +-:0.5 Spread cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. 4.0 Shutoff solenoid

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 42.5
Tolerance
cm3/1000 str. +-: 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000s. : 4.0

IDLE SETTING

Volt

Rated speed rpm : 375

Del. quantity cm3/1000 strokes : 6.0 Tolerance	Rated speed rpm : 1400 Aneroid pressure
cm3/1000 str. +-: 2.0 Shutoff solenoid	hPa : 1500
Volt : 12	SV travei mm : 8.7
Spread	Tolerance mm +-: 0.4
cm3/1000 strokes : 4.0	Check
Check tolerance	
7.4.000	
cm3/1000s. : 4.5	Shutoff solenoid
<b>†</b>	volt : 12
<u> </u>	Rated speed rpm : 800 Aneroid pressure
FULL-LOAD SPEED REGULATION	hPa : 1500
	1, 3
Rated speed rpm : 2580	SV travel mm : 6.6
Pressure hPa : 1500	Tolerance mm + : 0.4
Del. quantity	Check
cm3/1000 strokes : 20.0	tolerance mm +-: 0.9
Tolerance	
cm3/1000 str. +-: 2.0	Shutoff solenoid
Shutoff solenoid	Volt : 12
	D 1 1 1 0000
Volt : 12	Rated speed rpm : 2000
CTAPTULE CUE: AEL TUENU	Aneroid pressure
STARTING FUEL DELIVERY	hPa : 1500
Code all and a land	
Rated speed rpm : 100	SV travel nm : 0.3
Del. quantity	Tolerance mm +-: 0.3
cm3/1000 strokes : 96.0	Check
Tolerance	tolerance mm + : 0.3
cm3/1000 str. +-: 1.0 +	Shutoff solenoid
Shutoff solenoid +	Volt : 12
Volt : 12 +	
+	Timing device
SET GRADUATED STARTING DELIVERY +	solenoid Volt : 100
CONTROL LEVER, IDLE STOP	
	SUPPLY PUMP PRESSURE CHARACTERISTIC
Rated speed rpm : 2000	
Tolerance	Rated speed rpm : 1400
cm3/1000 str. +-: 0.5	Aneroid pressure
Shutoff solenoid +	hPa : 1500
Volt : 12	Supply pomp
1	pressure bar : 7.5
SETTING GRAD. STARTING FUEL DELIVERY	Tolerance bar + : 0.3
FULL-LOAD STOP CONTROL LEVER	Shutoff solenoid
TOCK FORD STOLLOW CONTROL FEVER	Volt : 12
Rated speed rpm : 100	• 12
Del. quantity	Rated speed rpm : 800
cm3/1000 strokes : 50.0	
Tolerance	Aneroid pressure hPa : 1500
cm3/1000 str. +: 1.0	· · · · · · · · · · · · · · · · · · ·
	Supply pomp
Shutoff solenoid	pressure bar : 6.7
Volt : 12	Tolerance bar +-: 0.3
†	Shutoff solenoid
†	Volt : 12
INJECTION—PUMP TEST SPECIFICATIONS +	OVERFLOW QUANTITY
+	
TIMING DEVICE CHARACTERISTIC +	Rated speed rpm : 700

Aneroid pressure hPa : 1500	+ Shutoff solenoid + Volt : 12
Overflow quantity ccm/10s : 97.2	Rated speed rpm : 1000
Tolerance ccm/10s +: 55.5	Aneroid pressure hPa : 500
Check tolerance	+ LDA/
ccm/10s +: 55.5 Shutoff solenoid	+ HBA stroke mm : 6.6 + Del. quantity
volt : 12	+ cm3/1000 strokes : 54.0 + Tolerance
Rated speed rpm : 2000 Aneroid pressure	cm3/1000 str. +-: 0.5 Check tolerance
hPa : 1500 Overflow quantity	+ cm3/1000s. $+-$ : 3.2
ccm/10s : 138.8 Tolerance	Shutoff solenoid : 12
ccm/10s +: 55.5	Rated speed rpm : 2000 Aneroid pressure
Check tolerance ccm/10s +-: 55.5	hPa : 1500  Del. quantity
Shutoff solenoid Volt : 12	cm3/1000 strokes : 60.0
DELIVERY AND BREAKAWAY CHARACTERISTIC	cm3/1000 str. +-: 2.0 Check tolerance
Rated speed rpm : 2580	cm3/1000s: 3.2 Shutoff solenoid
Aneroid pressure hPa : 1500	Volt : 12
Del. quantity cm3/1000 strokes : 20.0	Rated speed rpm : 1000 Aneroid pressure
Tolerance cm3/1000 str. +-: 2.0	hPa : 1500 Del. quantity
Check tolerance cm3/1000s. + : 5.0	cm3/1000 strokes : 63.0
Shutoff solenoid Voit : 12	+ cm3/1000 str. $+$ : 2.5
	the Check tolerance cm3/1000s. + : 4.0
Aneroid pressure	Shutoff solenoid : 12
Del. quantity	Rated speed rpm : 1250
cm3/1000 strokes : 46.0 Tolerance	Aneroid pressure hPa : 1500
cm3/1000 str. + : 4.0 Check tolerance	- Del. quantity - cm3/1000 strokes : 60.0
cm3/1000s. +-: 6.0 Shutoff solenoid	Tolerance cm3/1000 str. + : 0.5
Volt : 12	- Check tolerance - cm3/1000s. +-: 2.8
Rated speed rpm : 2670 Aneroid pressure	Shutoff solenoid : 12
hPa : 1500 Del. quantity	‡
cm3/1000 strokes : 1.5 Tolerance	ELECTR. SHUTOFF
cm3/1000 str. +-: 1.5 Check tolerance	CONTROL LEVER, IDLE STOP
cm3/1000s. +-: 1.5	+ Rated speed rpm : 375

Del. quantity		4	<del> </del>	
cm3/1000 strokes	: 1	.5		
Tolerance			- ASSEMBLY AND AD	JUSTMENT DIMENSIONS
cm3/1000 str. +-	: 1	.5	-	
Check tolerance		_ 1	-	
cm3/1000s. +	: 1	.5	- LDA/	
Spread cm3/1000 strokes		.0	- HBA stroke mm	: 6.6
CIIDA 1000 SELOKES	: )	0	- Dimension K mm	: 5,3
FULL-LOAD STOP CON	NTDOLLEV	TED 3	<ul> <li>Tolerance mm +</li> <li>Dimension KF mm</li> </ul>	⊢: +-0,1 • 4.7
TOLL LOND OTOL COL	WINOL LLY	Γν.		: 6,7 ⊢: +-0,2
Rated speed rpm	: 375		- MS1 dimension m	
Del. quantity		1		+0,15/ <del>-</del> 0,1
cm3/1000 strokes	: 1	.5	-	0/15/ 0/1
Tolerance		1	No.	
cm3/1000 str. +-	: 1	.5	- MICROSWITCH	
Spread		4	SET	
cm3/1000 strokes	: 5	.0	_	
Check tolerance			- mm	: GST 76,9
cm3/1000s. +-	: 1	.5		
Spread	_		CONTROL LEVER PO	DSITION
cm3/1000 strokes	: 5	.0	- SET	
IDLE DELIVERY		†	<del>-</del>	
TATE AETTAEKI		1	Control Laura	
Pated speed nom	: 480	1	- Control lever	. 75 0 70 0
Rated speed rpm Del. quantity	. 400	1	- position YA mm	: 35,839,8
cm3/1000 strokes	. 1	.5	- Control lever	
Tolerance	• '	.,	- position YB mm	: 48,157,9
cm3/1000 str. +-	: 1	.5	-	. 40,151,7
Check tolerance	•		-	
cm3/1000s. +	: 1	.5		·
Shutoff solenoid		4	•	
Volt	:	12	<ul> <li>End of test-spec</li> </ul>	ification sheet
		+	•	
		+	-	
		+	-	
		†	•	
		+	•	
CTADT TOANCYTON		†	•	
START TRANSITION		†	•	
Rated speed rpm	: 320	1	•	
Del. quantity	. 520	1	-	
cm3/1000 strokes	: 45	.n I		
Tolerance	• +2	··	•	
cm3/1000 str. +-	: 20	.0	•	
Shutoff solenoid		· ·	•	
Volt	:	12	•	
-		_	•	
		+	-	
Rated speed rpm	: 180	+	•	
Del. quantity		+	-	
cm3/1000 strokes	: 110	.0	-	
Tolerance		+	•	
cm3/1000 str. +	: 25	.0	•	
Shutoff solenoid		<b>1</b> 2	•	
Volt	:	12	•	
		+	-	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 26.03.96 : ISO 4113 Test oil

: 0 460 414 137 Part no. Pump designation : VE4/11F1250L678

Customer-spec, information : IVECO-FIAT Customer : 8045.25K.214 Motor Power KW 69.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

har Tolerance bar ←;

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

#### REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

950 Rated speed rpm Aneroid pressure

1000

Setting mm 2.8 Tolerance mm 0.2

Shutoff solenoid

Volt 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm 950

Aneroid pressure hPa

1000

Supply pomp pressure bar

7.3 0.3

Tolerance bar +-: Shutoff solenoid

#### 12 Volt

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 750 Aneroid pressure

hPa 10C0

Del. quantity cm3/1000 strokes :

74.5

Tolerance

cm3/1000 str. + :

Spread

cm3/1000 strokes : 3.5

Check tolerance cm3/1000s.

4.0

Shutoff solenoid Volt

12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity

Tolerance

cm3/1000 strokes :

cm3/1000 str. + :

Shutoff solenoid Volt

12

Check tolerance

cm3/1000s.

4.0

#### IDLE SETTING

Rated speed rpm : 335

Del. quantity cm3/1000 strokes :

9.0

Tolerance

cm3/1000 str. +-:

Shutoff solenoid

2.0

12 Volt

Spread	1
cm3/1000 strokes : 3.5 Check tolerance	Rated speed rpm : 1100 Aneroid pressure
cm3/1000s. : 4.0	+ hPa : 1000
	+ Supply pomp
	<pre>+ pressure bar : 8.0 + Tolerance bar +-: 0.3</pre>
	Shutoff solenoid
FULL-LOAD SPEED REGULATION	Volt : 12
TOLE LOND OF ELD REGULATION	. 12
Rated speed rpm : 1330	+ Rated speed rpm : 800
Pressure hPa : 1000	+ Aneroid pressure
Del. quantity	+ hPa : 1000
cm3/1000 strokes : 56.0	+ Supply pomp
Tolerance	+ pressure bar : 6.4
cm3/1000 str. + : 3.0	† Tolerance bar + : 0.3
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
STARTING FUEL DELIVERY	OVEREI OU OUANTITY
STARTING FUEL DELIVERT	† OVERFLOW QUANTITY
Rated speed rpm : 100	Rated speed rpm : 1250
Del. quantity	Aneroid pressure
cm3/1000 strokes : 100.0	+ hPa : 1000
Tolerance	+ Overflow quantity
cm3/1000 str. + : 20.0	+ ccm/10s : 97.2
Shutoff solenoid	+ Tolerance
Volt : 12	+ ccm/10s +-: 41.6
	+ -,
	I Chack talananaa
	+ Check tolerance
	+ ccm/10s +-: 41.6
	ccm/10s +-: 41.6 Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	+ ccm/10s +-: 41.6
INJECTION-PUMP TEST SPECIFICATIONS	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12
INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12
TIMING DEVICE CHARACTERISTIC	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12 Rated speed rpm : 350 Aneroid pressure hPa : 1000
TIMING DEVICE CHARACTERISTIC Rated speed rpm : 1100	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100  Aneroid pressure	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8
TIMING DEVICE CHARACTERISTIC Rated speed rpm : 1100	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100  Aneroid pressure hPa : 1600	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure hPa : 1600  SV travel mm : 4.4	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure tiPa : 1600  SV travel mm : 4.4 Tolerance mm + : 0.4	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2  Check tolerance
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure hPa : 1600  SV travel mm : 4.4 Tolerance mm + : 0.4 Check	ccm/10s
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure tiPa : 1600  SV travel mm : 4.4 Tolerance mm + : 0.4	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2  Check tolerance
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure hPa : 1600  SV travel mm : 4.4 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7	ccm/10s + : 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  Shutoff solenoid Volt : 12
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure tiPa: : 1600  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2  Check tolerance ccm/10s +-: 22.2 Shutoff solenoid
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure tiPa: : 1600  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 800	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2  Check tolerance ccm/10s +-: 22.2  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure tiPa: : 1600  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 800 Aneroid pressure	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2  Check tolerance ccm/10s +-: 22.2  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1330
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure tiPa: : 1600  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 800	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2  Check tolerance ccm/10s +-: 22.2  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1330 Aneroid pressure
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure hPa : 1600  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 800 Aneroid pressure hPa : 1000	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2  Check tolerance ccm/10s +-: 22.2  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1330 Aneroid pressure hPa : 1000
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure hPa : 1600  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 800 Aneroid pressure hPa : 1000  SV travel mm : 1.5	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2  Check tolerance ccm/10s +-: 22.2  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1330 Aneroid pressure hPa : 1000 Del. quantity
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure hPa : 1600  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 800 Aneroid pressure hPa : 1000  SV travel mm : 1.5	ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2  Check tolerance ccm/10s +-: 22.2  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1330 Aneroid pressure hPa : 1000
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure hPa : 1600  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 800 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7	Ccm/10s +-: 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +-: 22.2  Check tolerance ccm/10s +-: 22.2  Check tolerance ccm/10s +-: 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1330 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 56.0 Tolerance cm3/1000 str. +-: 3.0
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure tiPa: : 1600  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 800 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid	Ccm/10s + : 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  Check tolerance ccm/10s : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1330 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 56.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure hPa : 1600  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 800 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7	- ccm/10s +-: 41.6 - Shutoff solenoid - Volt : 12 - Rated speed rpm : 350 - Aneroid pressure - hPa : 1000 - Overflow quantity - ccm/10s : 63.8 - Tolerance - ccm/10s +-: 22.2 - Check tolerance - ccm/10s +-: 22.2 - Shutoff solenoid - Volt : 12 - DELIVERY AND BREAKAWAY CHARACTERISTIC - Rated speed rpm : 1330 - Aneroid pressure - hPa : 1000 - Del. quantity - cm3/1000 strokes : 56.0 - Tolerance - cm3/1000 str. +-: 3.0 - Check tolerance - cm3/1000s. +-: 8.0
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1100 Aneroid pressure tiPa: : 1600  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 800 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid	Ccm/10s + : 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 350 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  Check tolerance ccm/10s : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1330 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 56.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance

		1
Rated speed rpm :	1360	+ Aneroid pressure + hPa : 1000
Aneroid pressure	1200	+ nra : 1000 + Del. quantity
hPa :	1000	cm3/1000 strokes : 74.5
Del. quantity	1555	Tolerance
cm3/1000 strokes :	38.0	- cm3/1000 str. +-: 0.5
Check tolerance		+ Check tolerance
cm3/1000s. +-:	6.Ⴎ	+ cm3/1000s. $+$ : 3.0
Shutoff solenoid		+ Shutoff solenoid
Volt :	12	+ Volt : 12
	– .	+
Rated speed rpm :	1470	+
Aneroid pressure	4000	
hPa :	1000	ELECTR. SHUTOFF
Del. quantity cm3/1000 strokes :	1.5	CONTROL LEVER, IDLE STOP
Tolerance	1.5	Rated speed rpm : 335
cm3/1000 str. + :	1.5	+ Rated speed rpm : 335 + Aneroid pressure
Check tolerance	1.7	hPa : 1000
cm3/1000s. +:	1.5	Del. quantity
Shutoff solenoid	.,,,	- cm3/1000 strokes : 1.5
Volt :	12	+ Tolerance
	· <del>-</del>	+  cm3/1000  str. + : 1.5
Rated speed rpm :	5 <b>0</b> 0	+ Check tolerance
Aneroid pressure		+ cm3/1000s. +-: 1.5
hPa :	250	+ Spread
Del. quantity		+ cm3/1000 strokes : 5.0
cm3/1000 strokes :	63.5	†
Tolerance	0.5	+ FULL-LOAD STOP CONTROL LEVER
cm3/1000 atr. +-:	0.5	735
Check tolerance	7.6	+ Rated speed rpm : 335
cm3/1000c •		Anomaid management
cm3/1000s. +-:	3.0	+ Aneroid pressure
Shutoff solenoid		+ hPa : 1000
	12	+ hPa : 1000 + Del. quantity
Shutoff solenoid Volt :		hPa : 1000 Del. quantity cm3/1000 strokes : 1.5
Shutoff solenoid Volt : Rated speed rpm :	12	+ hPa : 1000 - Del. quentity - cm3/1000 strokes : 1.5 - Tolerance
Shutoff solenoid Volt : Rated speed rpm : Aneroid pressure hPa :	12	+ hPa : 1000 - Del quentity - cm3/1000 strokes : 1.5 - Tolerance
Shutoff solenoid Volt : Rated speed rpm : Aneroid pressure hPa : Del. quantity	12 1250 1000	+ hPa : 1000 - Del. quantity - cm3/1000 strokes : 1.5 - Tolerance - cm3/1000 str. +- : 1.5
Shutoff solenoid Volt : Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes :	12 1250	hPa : 1000  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. +- : 1.5  Spread  cm3/1000 strokes : 5.0  Check tolerance
Shutoff solenoid Volt : Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance	12 1250 1000 64.5	hPa : 1000  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. +- : 1.5  Spread  cm3/1000 strokes : 5.0  Check tolerance  cm3/1000s. +- : 1.5
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + :	12 1250 1000	hPa : 1000  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. +- : 1.5  Spread  cm3/1000 strokes : 5.0  Check tolerance  cm3/1000s. +- : 1.5  Spread
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance	12 1250 1000 64.5 1.5	hPa : 1000  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. +- : 1.5  Spread  cm3/1000 strokes : 5.0  Check tolerance  cm3/1000s. +- : 1.5
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	12 1250 1000 64.5	hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Spread cm3/1000 strokes : 5.0  Check tolerance cm3/1000s. + : 1.5  Spread cm3/1000 strokes : 5.0
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid	12 1250 1000 64.5 1.5 3.5	hPa : 1000  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. +- : 1.5  Spread  cm3/1000 strokes : 5.0  Check tolerance  cm3/1000s. +- : 1.5  Spread
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	12 1250 1000 64.5 1.5	hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5  Spread cm3/1000 strokes : 5.0
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :	12 1250 1000 64.5 1.5 3.5	hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5  Spread cm3/1000 strokes : 5.0  IDLE DELIVERY  Rated speed rpm : 400
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm :	12 1250 1000 64.5 1.5 3.5	hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5  Spread cm3/1000 strokes : 5.0  IDLE DELIVERY  Rated speed rpm : 400 Del. quantity
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :	12 1250 1000 64.5 1.5 3.5	hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. +- : 1.5  Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5  Spread cm3/1000 strokes : 5.0  IDLE DELIVERY  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure	12 1250 1000 64.5 1.5 3.5 12	hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5  Spread cm3/1000 strokes : 5.0  IDLE DELIVERY  Rated speed rpm : 400 Del. quantity
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes :	12 1250 1000 64.5 1.5 3.5 12	hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5  Spread cm3/1000 strokes : 5.0  IDLE DELIVERY  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Check tolerance
Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance:	12 1250 1000 64.5 1.5 3.5 12 350 1000 78.5	hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5  Spread cm3/1000 strokes : 5.0  IDLE DELIVERY  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Check tolerance cm3/1000s. + : 1.5  Check tolerance cm3/1000s. + : 1.5
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000str. + : Check tolerance cm3/1000s. + : Shutoff sclenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 strokes : Tolerance cm3/1000 str. + :	12 1250 1000 64.5 1.5 3.5 12 350 1000	hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. +- : 1.5  Spread cm3/1000s. +- : 1.5  Spread cm3/1000 strokes : 5.0  IDLE DELIVERY  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. +- : 1.5  Check tolerance cm3/1000s. +- : 1.5  Shutoff solenoid
Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000s. +: Check tolerance cm3/1000s. +: Shutoff sclenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance	12 1250 1000 64.5 1.5 3.5 12 350 1000 78.5 1.5	hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5  Spread cm3/1000 strokes : 5.0  IDLE DELIVERY  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Check tolerance cm3/1000s. + : 1.5  Check tolerance cm3/1000s. + : 1.5
Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	12 1250 1000 64.5 1.5 3.5 12 350 1000 78.5	hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. +- : 1.5  Spread cm3/1000 strokes : 5.0  Check tolerance cm3/1000s. +- : 1.5  Spread cm3/1000 strokes : 5.0  IDLE DELIVERY  Rated speed rpm : 400  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. +- : 1.5  Check tolerance cm3/1000s. +- : 1.5  Shutoff solenoid Volt : 12
Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Shutoff solenoid	12 1250 1000 64.5 1.5 3.5 12 350 1000 78.5 1.5 3.5	hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Spread cm3/1000 strokes : 5.0  Check tolerance cm3/1000s. + : 1.5  Spread cm3/1000 strokes : 5.0  IDLE DELIVERY  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Check tolerance cm3/1000s. + : 1.5  Check tolerance cm3/1000s. + : 1.5  Shutoff solenoid Volt : 12
Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	12 1250 1000 64.5 1.5 3.5 12 350 1000 78.5 1.5	hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Spread cm3/1000 strokes : 5.0  Check tolerance cm3/1000s + : 1.5  Spread cm3/1000 strokes : 5.0  IDLE DELIVERY  Rated speed rpm : 400  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Check tolerance cm3/1000s + : 1.5  Shutoff solenoid Volt : 12  Rated speed rpm : 250  Del. quantity
Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Shutoff solenoid	12 1250 1000 64.5 1.5 3.5 12 350 1000 78.5 1.5 3.5	hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Spread cm3/1000 strokes : 5.0  Check tolerance cm3/1000s. + : 1.5  Spread cm3/1000 strokes : 5.0  IDLE DELIVERY  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Check tolerance cm3/1000s. + : 1.5  Check tolerance cm3/1000s. + : 1.5  Shutoff solenoid Volt : 12

Tolerance		
cm3/1000 str.	+:	3.0
Check tolerance	<b>:</b>	
cm3/1000s.	+ :	5.0
Shutoff solenoi	d	
Volt	:	12

# START TRANSITION

Rated speed rpm	:	250
Del. quantity cm3/1000 strokes	:	58.0
Tolerance cm3/1000 str. + Shutoff solenoid	:	15.0
Volt	:	12
		470

Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 107.0

Tolerance cm3/1000 str. + : 25.0

Shutoff solenoid

Volt : 12

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 6,4
Tolerance mm + : +0,2
Dimension MS mm : 1,1
Tolerance mm + : +0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 34,9..36,9

Control lever

position YB mm : 47,9..52,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.04.96 Test oil : ISO 4113

Part no. : 0 460 414 116 Pump designation : VE4/11F1900R444-1

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.47.3700
Power KW : 85.0

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

**Overflow** 

restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000

Setting mm : 1.8
Tolerance mm + : 0.1
Shutoff solenoid

SUPPLY PUMP PRESSURE

Volt

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 6.2
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

12

Rated speed rpm : 1400 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 56.0 Tolerance cm3/1000 str. +: 0.5 Spread cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 4.5 Shutoff solenoid Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 27.0
Tolerance
cm3/1000 str. +: 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000s. : 4.5

## IDLE SETTING

Rated speed rpm : 325
Del. quantity
cm3/1000 strokes : 17.0
Tolerance
cm3/1000 str. +-: 2.0
Shutoff solenoid
Volt : 12

Spread			+	Aneroid pressure
cm3/1000 strokes	:	6.0	+	hPa : 1000
Check tolerance		_	+	Del. quantity
cm3/1000s.	:	6.5	+	cm3/1000 strokes : -0.8
			+	Tolerance
			+	cm3/1000 str. + : 0.1
			+	Shutoff solenoid
			+	Volt : 12
FULL-LOAD SPEED RE	EGUI	LATION	+	
		2452	+	
Rated speed rpm	•	2100	+	INJECTION-PUMP TEST SPECIFICATIONS
Pressure hPa	:	1000	+	
Del. quantity		77.0	+	TIMING DEVICE CHARACTERISTIC
cm3/1000 strokes	•	37.0	+	2.00
Tolerance		7.0	+	Rated speed rpm : 1600
cm3/1000 str. +	:	3.0	†	Aneroid pressure
Shutoff solenoid	_	12	†	hPa : 1000
Volt	•	12	†	01/ 4
STARTING FUEL DEL	TVE	DV	Ť	SV travel mm : 4.3 Tolerance mm + : 0.4
SIAKITING FUEL DEL.	TAE	N1	Ť	
Rated speed rpm	:	100	Ţ	Check tolerance mm +-: 0.7
Del. quantity	•	100	I	Shutoff solenoid
cm3/1000 strokes	•	75.0	I	Volt : 12
Tolerance	•	15.0	I	voct . 12
cm3/1000 str. +		25.0	I	Rated speed rpm : 1100
Shutoff solenoid	•	65.0	I	Aneroid pressure
Volt		12	I	hPa : 1000
10(1	•	16	I	· 1000
			1	SV travel mm : 1.1
			1	Tolerance mm +: 0.4
LOAD-DEPENDENT STA	ART	OF DELIVERY	1	Check
SETTING	••••		1	tolerance mm + : 0.7
			1	Shutoff solenoid
DELIVERY DIFFERENCE	Œ		+	Volt : 12
			+	
Rated speed rpm	:	1400	+	Rated speed rpm : 1900
Pressure hPa	:	1000	+	Aneroid pressure
Del. quantity			+	hPa : 1000
cm3/1000 strokes	:	-26.0	+	
Tolerance			+	SV travel mm : 4.9
cm3/1000 str. +	:	1.0	+	Tolerance mm + : 0.4
Shutoff solenoid		40	+	Check
Volt	:	12	†	tolerance mm +: 0.6
			t	Shutoff solenoid
PRESSURE DIFFERENCE	Æ		†	Volt : 12
Coded annual ann		1/00	†	OUDDLY DUMB DECOURT CHARACTERICTIC
Rated speed rpm	•	1400	Ť	SUPPLY PUMP PRESSURE CHARACTERISTIC
Aneroid pressure hPa	:	1000	T	Rated speed rpm : 1900
Del. quantity	•	1000	Ι	Rated speed rpm : 1900 Aneroid pressure
cm3/1000 strokes		-0.2	I	hPa : 1000
Tolerance	•	U. L.	I	Supply pomp
cm3/1000 str. +	•	0.1	I	pressure bar : 8.7
Shutoff solenoid	•	<b>U</b> . 1	I	Tolerance bar +: 0.3
Volt	:	12	1	Shutoff solenoid
<b>-</b> -	-		1	Volt : 12
TIMING-DEVICE TRAV	/EL	DIFFERENCE	1	
	-		+	Rated speed rpm : 700
Rated speed rpm	:	1400	+	•
			•	

	Aneroid pressure			+	Rated speed rpm	:	2290
	hPa	: 10	00	+	Aneroid pressure		
	Supply pomp	. ,	2	+	hPa	:	1000
	pressure bar Tolerance bar +-	: 4	2 3	†	Del. quantity cm3/1000 strokes		1.5
	Shutoff solenoid	. 0	.5	I	Tolerance	•	1.5
	Volt	:	12	1	cm3/1000 str. +-	:	1.5
			-	+	Check tolerance	•	
	OVERFLOW QUANTITY			+	cm3/1000s. +-	:	1.5
	Rated speed rpm	: 1900		†	Shutoff solenoid		43
	Aneroid pressure	: 1900		Ī	Volt	:	12
	hPa	: 10	<b>0</b> 6	1	Rated speed rpm	:	700
	Overflow quantity			+	Aneroid pressure	•	
	ccm/10s	: 152	.7	+	hPa	:	400
	Tolerance ccm/10s +	. 27		†	104/		
	ccm/ rus	: 21	.7	Ī	LDA/ HBA stroke mm	:	6.2
	Check tolerance			Ţ	Del. quantity	•	0.2
	ccm/10s +-	: 27	.7	+	cm3/1000 strokes	:	44.0
	Shutoff solenoid			+	Tolerance		
,	Volt	•	12	†	cm3/1000 str. +-	:	0.5
	Rated speed rpm	: 700		Ī	Check tolerance cm3/1000s. +-		4.0
	Aneroid pressure	. , , ,		1	Shutoff solenoid	•	4.0
	hPa	: 10	00	+	Volt	:	12
	Overflow quantity			+			
	ccm/10s	: 116	.6	†	Rated speed rpm	:	1900
	Tolerance ccm/10s +	: 22	2	Ī	Aneroid pressure hPa		1000
		• • • • • • • • • • • • • • • • • • • •	• •	Ţ	Del. quantity	•	1000
	Check tolerance			+	cm3/1000 strokes	:	57.0
	ccm/10s +	: 22	.2	+	Tolerance		
	Shutoff solenoid Volt		10	†	cm3/1000 str. +-	-	2.5
	voct	•	12	I	Check tolerance cm3/1000s. +-		3.5
1	DELIVERY AND BREAK	KAWAY CHA	RACTERISTIC	1	Shutoff solenoid	•	3.7
				+	Volt	•	12
	Rated speed rpm	: 2100		+			4
	Aneroid pressure hPa	: 10	00	†	Rated speed rpm	:	1200
	Del. quantity	. 10	00	I	Aneroid pressure hPa		1000
	cm3/1000 strokes	: 37	.0	+	Del. quantity	•	1000
	Tolerance	_		+	cm3/1000 strokes	:	55.0
	cm3/1000 str. +	: 3	.0	†	Tolerance		
	Check tolerance		.5	İ	cm3/1000 str. +- Check tolerance	•	2.5
	Shutoff solenoid	• 4	. )	I	cm3/1000s. +-	•	4.0
	/olt	•	12	+	Shutoff solenoid	•	7.0
				+	Volt	:	12
	Rated speed rpm	: 2200		†	Data dan and and	_	4750
	Aneroid pressure nPa	: 10	nn	Ī	Rated speed rpm Aneroid pressure	:	1750
	Del. quantity	• 10	50	I	hPa	:	1000
(	cm3/1000 strokes	: 18	.0	+	Del. quantity	-	. 555
	Check tolerance			+	cm3/1000 strokes	:	58.0
	Shutoff solenoid	: 6	.0	†	Tolerance		2 -
	onutott solenoid Volt	:	12	I	cm3/1000 str. +- Check tolerance	•	2.5
		•	•	+	cm3/1000s. +-	:	3.5
				•	_ <del>-</del> -		

Shutoff solenoid	+ Del. quantity
Volt : 12	+ cm3/1000 strokes : 1.5 + Tolerance
Rated speed rpm : 700 Aneroid pressure	+ cm3/1000 str. + : 1.5
hPa : 1000	+ Check tolerance + cm3/1000s. +: 1.5
Del. quantity cm3/1000 strokes : 57.0	+ Shutoff soleroid + Volt : 12
Tolerance cm3/1000 str. +-: 4.5	+
Check tolerance cm3/1000s. +-: 5.5	‡
Shutoff salenoid Volt : 12	CHECKING LOAD-DEPENDENT
Rated speed rpm : 1400	START OF DELIVERY
Aneroid pressure hPa : 1000	+ DELIVERY DIFFERENCE
Del. quantity cm3/1000 strokes : 56.0	Rated speed rpm : 1400 Aneroid pressure
Tolerance cm3/1000 str. +-: 0.5	† hPa : 1000 † Del. quantity
Check tolerance cm3/1000s. +-: 3.5	- cm3/1000 strokes : -28.0 - Tolerance
Shutoff solenoid Volt : 12	+ cm3/1000 str. +: 3.0 + Check tolerance
	+ cm3/1000s. +: 4.0 + Shutoff solenoid
ELECTR. SHUTOFF	+ Volt : 12
CONTROL LEVER, IDLE STOP	TIMING-DEVICE TRAVEL DIFFERENCE
Rated speed rpm : 325 Del. quantity	Rated speed rpm : 1400 Aneroid pressure
cm3/1000 strokes : 1.5 Tolerance	+ hPa : 1000
cm3/1000 str. +-: 1.5	+ Del. quantity + cm3/1000 strokes : -0.8
Check tolerance cm3/1000s. +-: 1.5	+ Tolerance - cm3/1000 str. +: 0.1
Spread cm3/1000 strokes : 5.0	theck tolerance cm3/1000s. +: 0.1
FULL-LOAD STOP CONTROL LEVER	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 325	DELIVERY DIFFERENCE
Del. quantity cm3/1000 strokes : 1.5	Rated speed rpm : 1400
Tolerance cm3/1000 str. + : 1.5	Aneroid pressure : 1000
Spread cm3/1000 strokes : 5.0	Del. quantity cm3/1000 strokes : 1.5
Check tolerance cm3/1000s. + : 1.5	Tolerance + : 1.5
Spread cm3/1000 strokes : 5.0	+ Check tolerance + cm3/1000s. +-: 1.5
IDLE DELIVERY	+ Shutoff solenoid + Volt : 12
	+
Rated speed rpm : 450	+ TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm Aneroid pressure hPa	. 1/0	
hPa	: 140	)
		200
Tolerance mm +	: !	0.2
Check		
tolerance mm +	:	0.4
Shutoff solenoid		
Volt	:	12
OT407 T04407T444		
START TRANSITION		
Rated speed rpm	: 500	1
Del. quantity	. ,	,
cm3/1000 strokes	. 2	2.0
Tolerance		
cm3/1000 str. +		3.0
Shutoff solenoid	: 3	o.u
Snutorr solenoia Volt	•	12
VOLL	•	16
Rated speed rpm	: 200	)
Del. quantity		-
cm3/1000 strokes	: 80	0.0
Tolerance		<del>-</del>
cm3/1000 str. +-	: 2	5.0
Shutoff solenoid	- 600-0	· • <del>-</del>
Volt	:	12
	•	-
LDA/ HBA stroke mm Dimension K mm Tolerance mm +- Dimension KF mm Tolerance mm +- MS1 dimension mm Tolerance mm +- KSB travel mm	: 3,3 : +-0,1 : 8,4 : +-0,2	3.2 /-0,1
TO THE TIES		
CONTROL LEVER POS: SET Control lever		39,9
CONTROL LEVER POS: SET Control lever		39,9

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.04.96 Test oil : ISO 4113

Part no. : 0 460 484 074 Pump designation : VE4/8F2300R598

Customer—spec. information Customer : RENAULT Motor : F8Q - 620 Power KW : 45.0

## TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C : 45 Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +-: 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

#### REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Supply pomp

pressure bar : 5.5 Tolerance bar + : 0.3

Shutoff solenoid

Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 str. +: 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid

Shutoff solenoid Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 str. + : 2.0
Shutoff solenoid
Volt : 12

#### IDLE DELIVERY

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 9.5
Tolerance
cm3/1000 str. + : 2.0
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

## HIGH IDLE SETTING

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 9.0

Tolerance 4	
cm3/1000 str. +-: 2.0	
Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12 +	THOUGHTON TON TEST OF COTT TONTON
+	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION +	
Rated speed rpm : 2450	Rated speed rpm : 2000
Del. quantity	SV travel mm : 6.3
cm3/1000 strokes : 24.5	Tolerance mm + : 0.4
Tolerance	Check
cm3/1000 str. +: 3.0	tolerance mm + : 0.6
Shutoff solenoid + 12	Shutoff solenoid Volt : 12
12	Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 600
+	
Rated speed rpm : 100 + Del. quantity +	SV travel mm : 1.2
cm3/1000 strokes : 55.0	Tolerance mm +- : 0.4 Check
Tolerance	tolerance mm + : 0.6
cm3/1000 str. + : 15.0	Shutoff solenoid
Shutoff solenoid	Volt : 12
Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
$\downarrow$	SOFTER FORF FRESSORE CHARACTERISTIC
+	Rated speed rpm : 2000
LOAD-DEPENDENT START OF DELIVERY	Supply pomp
SETTING	pressure bar : 7.7 Tolerance bar +-: 0.3
DELIVERY DIFFERENCE	Shutoff solenoid
+	Volt : 12
Rated speed rpm : 1250	
Del. quantity + cm3/1000 strokes : -7.0 +	Rated speed rpm : 600
Tolerance	Supply pomp pressure bar : 3.5
cm3/1000 str. +: 1.0	Tolerance bar + : 0.3
Shutoff solenoid +	Shutoff solenoid
Volt : 12	Volt : 12
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
Theodore barreness	OFFILI FOR GOVIALTIA
Rated speed rpm : 1250	Rated speed rpm : 2250
Del. quantity	Overflow quantity
cm3/1000 strokes : -0.2	ccm/10s : 97.2 Tolerance
cm3/1000 str. + : 0.1	ccm/10s +- : 41.6
Shutoff solenoid	
Volt : 12 +	Check tolerance
TIMING-DEVICE TRAVEL DIFFERENCE +	ccm/10s +-: 41.6 Shutoff solenoid
TENENCE THAT ENGINE	Volt : 12
Rated speed rpm : 1250	
Del. quantity	Rated speed rpm : 600
cm3/1000 strokes : -0.7	Overflow quantity ccm/10s : 63.8
cm3/1000 str. +: 0.1	Tolerance . 05.8
Shutoff solenoid +	ccm/10s +-: 22.2
Volt : 12 +	
+	

			+	Tolerance		
	tolerance		+	cm3/1000 str. +-	: 1.0	
ccm/10		: 22.2	+	Check tolerance		
	f solenoid		+	cm3/1000s. +-	2.3	
Volt		: 12	+	Shutoff solenoid		
			+	Volt	: 12	
DELIVE	RY AND BREAK	KAWAY CHARACT	ERISTIC +			
			+		: 600	
	speed rpm	: 2450	+	Del. quantity		
	quantity		+	cm3/1000 strokes	: 31.9	
	000 strokes	: 24.5	+	Tolerance		
Tolera		7.0	†	cm3/1000 str. +-	: 1.5	
	000 str. +-	: 3.0	†	Check tolerance		
	tolerance	: 4.0	†	cm3/1000s. +-	2.3	
	f solenoid	. 4.0	†	Shutoff solenoid	. 43	
Volt	Societion	: 12	Ť	Volt	: 12	
VOLU		: 12		Rated speed rpm	1250	
Pated	speed rpm	: 2650	I	Del. quantity	1230	
	uantity	, 2000	I	cm3/1000 strokes	: 31.5	
	000 strokes	: 9.5	I	Tolerance	. 31.3	
	tolerance	• , , ,		cm3/1000 str. +-	0.5	
cm3/10		: 5.0	1	Check tolerance	. 0.5	
Shutof	f solenoid		1	cm3/1000s. +-	2.3	
Volt		: 12	1	Shutoff solenoid		
			+	Volt	: 12	
Rated	speed rpm	: 2950	+			
	wentity		+			
	100 strokes	: 2.5	+			
Tolera			+	ELECTR. SHUTOFF		
	000 str. +	: 2.5	+	CONTROL LEVER, IDLE	E STOP	
	tolerance	. 2.5	†			
	00s. +	: 2.5			410	
Volt	f solenoid	: 12	†	Del. quantity	. 4 -	
VOLL		: 12	†	cm3/1000 strokes : Tolerance	: 1.5	
Pated	speed rpm	: 2250	Ī	cm3/1000 str. +- :	1.5	
	uantity	. 2250	I	Check tolerance	. 17	
	00 strokes	: 32.1	1	cm3/1000s. +	1.5	
Tolera		· • • • • • • • • • • • • • • • • • • •	1	Spread		
	00 str. +	: 1.0	1	cm3/1000 strokes	5.0	
	tolerance		1			
cm3/10	00s. +	: 2.3	+	FULL-LOAD STOP CONT	TROL LEVER	
	f solenoid		+			
Volt		: 12	+	Rated speed rpm :	410	
			+	Del. quantity		
	speed rpm	: 1625	+	cm3/1000 strokes	1.5	
	uantity	. 74.0	†	Tolerance	4 =	
	00 strokes	: 31.0	+	cm3/1000 str. +-:	1.5	
Tolera	nce 00 str. +	: 1.5	†	Spread		
	tolerance	: 1.5	†	cm3/1000 strokes : Check tolerance	5.0	
cm3/10		: 2.3	I	cm3/1000s. +-:	1.5	
	f solenoid		I	Spread	. 1.5	
Volt		: 12	1	cm3/1000 strokes	5.0	
			1			
Rated	speed rpm	: 2000	1			
Del. q	uantity		+			
	00 strokes	: 32.5	+			
			1			
			+			

# CHECKING LOAD-DEPENDENT START OF DELIVERY

#### DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -9.5
Tolerance
cm3/1000 str. +- : 3.0
Check tolerance
cm3/1000s. +- : 3.0
Shutoff solenoid
Volt : 12

#### TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -C.7
Tolerance
cm3/1000 str. + : 0.1
Check tolerance
cm3/1000s. + : 0.1
Shutoff solenoid
Volt : 12

#### DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 str. +-: 3.0
Check tolerance
cm3/1000s. +-: 3.0
Shutoff solenoid
Volt : 12

#### TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm +: 0.2
Check
tolerance mm +-: 0.3
Shutoff solenoid
Volt : 12

## START TRANSITION

Rated speed rpm : 310
Del. quantity
cm3/1000 strokes : 35.0
Tolerance
cm3/1000 str. + : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 str. + : 15.0

Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +-0,1
Dimension KF mm : 5,4
Tolerance mm + : +-0,2
Dimension MS mm : 1,3
Tolerance mm + : +-0,2

MICROSWITCH

SET

mm : 0,8.3,0 : 14,7..15,5

CONTROL LEVER POSITION SET

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Control lever

position YA mm : 30,3..34,3

Control lever

position YB mm : 67,1..69,9

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.04.96 Test oil : ISO 4113

Part no. : 0 460 484 075 Pump designation : VE4/8F2300R598-1

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 620 CA
Power KW : 45.0

## TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 683 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

## REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Supply pomp
pressure bar : 5.5
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 str. +-: 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 str. + : 2.0
Shutoff solenoid
Volt : 12

## IDLE DELIVERY

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 9.5
Tolerance
cm3/1000 str. +-: 2.0
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

#### HIGH IDLE SETTING

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 9.0

Tolerance	1
cm3/1000 str. +-: 2.0	
Shutoff solenoid Volt : 12	+ INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	+
Rated speed rpm : 2450	+ Rated speed rpm : 2000
Del. quantity	SV travel mm : 6.3
cm3/1000 strokes : 24.5	+ Tolerance mm + : 0.4
Tolerance cm3/1000 str. +-: 3.0	+ Check + tolerance mm ++: 0.6
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	† Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 600
Rated speed rpm : 100	T SV travei nm : 1.2
Del. quantity	† Tolerance mm + : 0.4
cm3/1000 strokes : 55.0 Tolerance	+ Check + tolerance mm + : 0.6
cm3/1000 str. + : 15.0	+ Shutoff solenoid
Shutoff solenoid Volt : 12	† Volt : 12
VOCC . 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
	Rated speed rpm : 2000
LOAD-DEPENDENT START OF DELIVERY	+ Supply pomp
SETTING	+ pressure bar : 7.7
DELIVERY DIFFERENCE	+ Tolerance bar + : 0.3 + Shutoff solenoid
D 1 d 2 d 3 d 3 d 3 d 3 d 3 d 3 d 3 d 3 d 3	+ Volt : 12
Rated speed rpm : 1250 Del. quantity	Rated speed rpm : 600
cm3/1000 strokes : -7.0	+ Supply pomp
Tolerance	+ pressure bar : 3.5
cm3/1000 str. +-: 1.0 Shutoff solenoid	+ Tolerance bar +-: 0.3 + Shutoff solenoid
Volt : 12	+ Volt : 12
PRESSURE DIFFERENCE	+ OVERFLOW QUANTITY
	+
Rated speed rpm : 1250 Del. quantity	+ Rated speed rpm : 2250
cm3/1000 strokes : -0.2	+ Overflow quantity + ccm/10s : 97.2
Tolerance	+ Tolerance
cm3/1000 str. + : 0.1 Shutoff solenoid	± ccm/10s + : 41.6
Volt : 12	+ Check tolerance
TIMING DEUTER TRAVEL DIFFERENCE	+ ccm/10s +: 41.6
TIMING-DEVICE TRAVEL DIFFERENCE	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 1250	+
Del. quantity cm3/1000 strokes : -0.7	<pre>+ Rated speed rpm : 600 + Overflow quantity</pre>
Tolerance	+ ccm/10s : 63.8
cm3/1000 str. +-: 0.1	Tolerance
Shutoff solenoid  Volt : 12	+ ccm/10s +-: 22.2
1 16	1

			ı	Talamana	
Check tolerance			İ	Tolerance cm3/1000 str. +-:	1.0
ccm/10s +		22.2	I	Check tolerance	1.0
Shutoff solenoid	•	CC. L	I	cm3/1000s. +-:	2.3
Volt	•	12	$\mathbf{I}$	Shutoff solenoid	۲.5
	•		1	Volt :	12
DELIVERY AND BREAK	AWA	Y CHARACTERISTIC	1		16
			1	Rated speed rpm :	600
Rated speed rpm	:	2450	1	Del. quantity	300
Del. quantity	•		1	cm3/1000 strokes :	31.9
cm3/1000 strokes	:	24.5	1	Tolerance	<b>21.</b> 7
Tolerance			1	cm3/1000 str. +-:	1.5
cm3/1000 str. :-	:	3.0		Check tolerance	
Check tolerance			1	cm3/1000s. +-:	2.3
cm3/1000s. +	:	4.0	+	Shutoff solenoid	
Shutoff solenoid			+	Volt :	12
Volt	:	12	+		
			+	Rated speed rpm :	1250
Rated speed rpm	:	2650	+	Del. quantity	
Del. quantity			+	cm3/1000 strokes :	31.5
cm3/1000 strokes	:	9.5	+	Tolerance	
Check tolerance			+	cm3/1000 str. +-:	0.5
cm3/1000s. +-	:	5.0	+	Check tolerance	
Shutoff solenoid			+	cm3/1000s. +-:	2.3
Volt	:	12	+	Shutoff solenoid	
			+	Volt :	12
Rated speed rpm	:	2950	+		
Del. quantity			†		
cm3/1000 strokes	:	2.5	+		
Tolerance		2.5	†	ELECTR. SHUTOFF	
cm3/1000 str. +	:	2.5	†	CONTROL LEVER, IDLE ST	0P
Check tolerance		2.5	Ť	Data dan and an	/40
cm3/1000s. +-		2.5	†	Rated speed rpm :	410
Volt		12	<b>T</b>	Del. quantity	4 5
VOLL	•	12	T	cm3/1000 strokes : Tolerance	1.5
Rated speed rpm		2250	I	cm3/1000 str. +-:	1.5
Del. quantity	•	2270	I	Check tolerance	1.0
cm3/1000 strokes	•	32.1	I	cm3/1000s. +-:	1.5
Tolerance	•	JL. 1	1	Spread	1.5
cm3/1000 str. +	:	1.0	1	cm3/1000 strokes :	5.0
Check tolerance	•	.,,	1		J.0
cm3/1000s. +-	:	2.3	1	FULL-LOAD STOP CONTROL	LEVER
Shutoff solenoid		· •	+		
Volt	:	12	+	Rated speed rpm :	410
			+	Del. quantity	
Rated speed rpm	:	1625	+	cm3/1000 strokes :	1.5
Del. quantity			+	Tolerance	
cm3/1000 strokes	:	31.0	+	cm3/1000 str. +-:	1.5
Tolerance			+	Spread	
cm3/1000 str. +-	:	1.5	+	cm3/1000 strokes :	5.0
Check tolerance			+	Check tolerance	
cm3/1000s. +-	:	2.3	+	cm3/1000s. +-:	1.5
Shutoff solenoid		40	+	Spread	
Volt	:	12	+	cm3/1000 strokes :	5.0
M-4 1		2000	†		
	:	2000	†		
Del. quantity	_	72 5	†		
cm3/1000 strokes	:	32.5	†		
			+		

## CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -9.5Tolerance cm3/1000 str. +: 3.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid Volt 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.7Tolerance cm3/1000 str. + :0.1 Check tolerance cm3/1000s. 0.1 Shutoff solenoid 12 Volt DELIVERY DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 5.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid 12 Volt

TIMING-DEVICE	TRAVEL	DIFFERENCE
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Rated speed rpm Tolerance mm +-	:	1250 0.2
Check tolerance mm +-	:	0.3
Shutoff solenoid Volt	:	12

## START TRANSITION

Rated speed rpm	:	310
Del. quantity cm3/1000 strokes	:	35.0
Tolerance cm3/1000 str. +-	:	10.0
Shutoff solenoid Volt	:	12

Rated speed rpm : 210
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 str. +- : 15.0
Shutoff solenoid
Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	K mm	:	3,3
Tolerance	mm +	•	+-0,1
Dimension			5,4
Tolerance		•	+-0,2
Dimension	MS min	•	1,3
Tolerance	mm +-	•	+-0,2

#### MICROSWITCH SET

mm	:	0,83,0
	:	14,715,5

## CONTROL LEVER POSITION SET

Control	lever		
position	YA mm	: 30,33	34,3

Control lever

position YB mm : 67,1..79,9

End of test-specification sheet

E09

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.04.96 Test oil : ISO 4113

: 0 460 484 087 Part no. Pump designation : VE4/8F2300R598-2

Customer-spec. information : RENAULT Customer Motor : F8Q - 620 45.0 Power KW

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance \*C + :

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

Tolerance bar +-: 3

: 1 680 750 073 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 450

**REMARKS** 

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm 3.7 Tolerance mm +-: 0.2 Shutoff solenoid Volt 12

## SUPPLY PUMP PRESSURE

Rated speed rpm 1250

Supply pomp

pressure bar Tolerance bar +-: 0.3 Shutoff solenoid

Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 31.5 Tolerance cm3/1000 str. +-:0.5 Spread cm3/1000 strokes : 2.5 Shutoff solenoid Volt 12

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : Del. quantity cm3/1000 strokes : 3.0 Tolerance cm3/1000 str. + : Shutoff solenoid Volt 12

## IDLE DELIVERY

Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 9.5 Tolerance cm3/1000 str. +-:2.0 Spread cm3/1000 strokes : 2.5 Shutoff solenoid 12

## HIGH IDLE SETTING

500 Rated speed rpm : Del. quantity cm3/1000 strokes : 9.0

Tolerance +	
cm3/1000 str. + : 2.0 +	
Shutoff solenoid Volt : 12	INJECTION-PUMP TEST SPECIFICATIONS
FULL-LOAD SPEED REGULATION	TIMING DEVICE CHARACTERISTIC
+	Rated speed rpm : 2003
Rated speed rpm : 2450  Del. quantity	SV travel mm : 6.3
cm3/1000 strokes : 24.5	Tolerance mm ← : 0.4 Check
cm3/1000 str. +: 3.0 + Shutoff solenoid +	tolerance mm + : 0.6 Shutoff solenoid
Volt : 12	Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 600
Rated speed rpm : 100	SV travel mma : 1.2
Del. quantity cm3/1000 strokes : 55.0	Tolerance mm +-: 0.4 Check
Tolerance + 15.0 +	tolerance mm +: 0.6 Shutoff solenoid
Shutoff solenoid +	Volt : 12
Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
Ŧ	Rated speed rpm : 2000
LOAD-DEPENDENT START OF DELIVERY SETTING	Supply pomp pressure bar : 7.7
DELIVERY DIFFERENCE	Tolerance bar + : 0.3
+	Shutoff solenoid Volt : 12
Rated speed rpm : 1250 + Del. quantity	Rated speed rpm : 500
cm3/1000 strokes : -7.0	Supply pomp
cm3/1000 str. + : 1.0 +	pressure bar : 3.5 Tolerance bar + : 0.3
Shutoff solenoid + Volt : 12 +	Shutoff solenoid Volt : 12
+	
PRESSURE DIFFERENCE	OYERFLOW QUANTITY
Rated speed rpm : 1250 + Del. quantity +	Rated speed rpm : 2250 Overflow quantity
cm3/1000 strokes : -0.2	ccm/16s : 97.2 Tolerance
cm3/1000 str. +-: 0.1	ccm/10s +-: 41.6
Volt : 12	Check tolerance ccm/10s +-: 41.6
TIMING-DEVICE TRAVEL DIFFERENCE	Shutoff solenoid
Rated speed rpm : 1250 +	Volt : 12
Del. quantity + cm3/1000 strokes : -0.7	Rated speed rpm : 600 Overflow quantity
Tolerance + : 0.1	ccm/10s : 63.8 Tolerance
Shutoff solenoid +	ccm/10s +-: 22.2
Volt : 12	
·	

	1 .	Tolerance	
Check tolerance		cm3/1000 str. +-:	1.0
ccm/10s +: 22.2		Check tolerance	1.0
Shutoff solenoid		cm3/1000s. +:	2.3
Volt : 12	+ :	Shutoff solenoid	
		Volt :	12
DELIVERY AND BREAKAWAY CHARAC			
Poted opend ppm . 2/50	† !	Rated speed rpm :	600
Rated speed rpm : 2450 Del. quantity		Del. quantity cm3/1000 strokes :	31.9
cm3/1000 strokes : 24.5		Tolerance	31.9
Tolerance		cm3/1000 str. +-:	1.5
cm3/1000 str. + : 3.0		Check tolerance	1.5
Check tolerance		cm3/1000s. +-:	2.3
cm3/1000s. + : 4.0		Shutoff solenoid	
Shutoff solenoid	† '	Volt :	12
Volt : 12	† ,	Data dama adama	4050
Rated speed rpm : 2650		Rated speed rpm : Del. quantity	1250
Del. quantity		cm3/1000 strokes :	31.5
cm3/1000 strokes : 9.5		Tolerance	31.5
Check tolerance		cm3/1000 str. +-:	0.5
cm $3/1000$ s. $\leftarrow$ : 5.0		Check tolerance	- • •
Shutoff solenoid		cm3/1000s. +:	2.3
Volt : 12		Shutoff solenoid	4.6
Rated speed rpm : 2950	† '	Volt :	12
Rated speed rpm : 2950 Del. quantity	Ī		
cm3/1000 strokes : 2.5	I.		
Tolerance	+ 1	ELECTR. SHUTOFF	
cm3/1000 str. +-: 2.5		CONTROL LEVER, IDLE	STOP
Check tolerance	+		
cm3/1000s. +: 2.5		Rated speed rpm :	410
Shutoff solenoid		Del. quantity	4.5
Volt : 12	,	cm3/1000 strokes : Tolerance	1.5
Rated speed rpm : 2250		cm3/1000 str. + :	1.5
Del. quantity		Check tolerance	1.5
cm3/1000 strokes : 32.1		cm3/100Cs. +-:	1.5
Tolerance		Spread	
cm3/1000 str. + : 1.0	+ (	cm3/1000 strokes :	5.0
Check tolerance	† .	FULL LOAD OTOD CONT	OL LEUES
cm3/1000s. + : 2.3 Shutoff solenoid	İ '	FULL-LOAD STOP CONTR	KUL LEVEK
Volt : 12	Į,	Rated speed rpm :	410
		Del. quantity	***
Rated speed rpm : 1625	+ (	cm3/1000 strokes :	1.5
Del. quantity	•	Tolerance	
cm3/1000 strokes : 31.0		cm3/1000 str. +-:	1.5
Tolerance cm3/1000 str. +-: 1.5		Spread	<i>r</i> o
Check tolerance		cm3/1000 strokes : Check tolerance	5.0
cm3/1000s. +-: 2.3		cm3/1000s. $+-:$	1.5
Shutoff solenoid	<u> </u>	Spread	
Volt : 12		cm3/1000 strokes :	5.0
B 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	+		
Rated speed rpm : 2000	†		
Del. quantity cm3/1000 strokes : 32.5	Ī		
und/ loco strokes , Je.J	I		

## CHECKING LOAD-DEPENDENT START OF DELIVERY

## DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -9.5
Tolerance
cm3/1000 str. +- : 3.0
Check tolerance
cm3/1000s. +- : 3.0
Shutoff solenoid
Volt : 12

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -0.7
Tolerance
cm3/1000 str. +: 0.1
Check tolerance
cm3/1000s. +: 0.1
Shutoff solenoid
Volt : 12

## DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 str. +: 3.0
Check tolerance
cm3/1000s. +: 3.0
Shutoff solenoid
Volt : 12

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm + : 0.2
Check
tolerance mm + : 0.3
Shutoff solenoid
Volt : 12

#### START TRANSITION

Rated speed rpm : 310
Del. quantity
cm3/1000 strokes : 35.0
Tolerance
cm3/1000 str. +-: 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +-0,1
Dimension KF mm : 5,4
Tolerance mm + : +-0,2
Dimension MS mm : 1,3
Tolerance mm + : +-0,2

MICROSWITCH SET

mm : 0,8..3,0 : 14,7..15,5

CONTROL LEVER POSITION SET

Control lever

position YA mm : 30,3..34,3

Control lever

position YB mm : 67,1..79,9

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.04.96 Test oil : ISO 4913

Part no. : 0 460 484 088 Pump designation : VE4/8F2300R598-3

Customer—spec. information
Customer : RENAULT
Motor : F8Q - 620 CA
Power KW : 45.0

## TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C : 45 Tolerance °C +- : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

#### REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7

Tolerance mm + : 0.2

Shutoff solenoid

SUPPLY PUMP PRESSURE

Volt

Rated speed rpm : 1250
Supply pomp
pressure bar : 5.5
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 str. +- : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 str. +-: 2.0
Shutoff solenoid
Volt : 12

## IDLE DELIVERY

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 9.5
Tolerance
cm3/1000 str. +- : 2.0
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

## HIGH IDLE SETTING

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 9.0

Tolerance	<del> </del>
cm3/1000 str. +-: 2.0	
Shutoff solenoid . 12	INJECTION-PUMP TEST SPECIFICATIONS
	TIMING DEVICE CHARACTERISTIC
FUIL-LOAD SPEED REGULATION	Poted aread area 3200
Rated speed rpm : 2450	+ Rated speed rpm : 2000 -
Del. quantity	SV travel mm : 6.3
cm3/1000 strokes : 24.5 - Tolerance	├ Tolerance mm
cm3/1000 str. +: 3.0	tolerance mm + : 0.6
Shutoff solenoid - 12 -	Shutoff solenoid Volt : 12
_	+
STARTING FUEL DELIVERY	Rated speed rpm : 600
Rated speed rpm : 100 - Del. quantity -	SV travel mm : 1.2
cm3/1000 strokes : 55.0	Tolerance mm +: 0.4 Check
Tolerance - cm3/1000 str. +-: 15.0 -	tolerance mm +: 0.6
cm3/1000 str. + : 15.0 - Shutoff solenoid -	Shutoff solencid Volt : 12
Volt : 12 -	<del>}</del>
	SUPPLY PUMP PRESSURE CHARACTERISTIC
LOAD-DEPENDENT START OF DELIVERY	Rated speed rpm : 2000
SETTING -	+ Supply pomp + pressure bar : 7.7
API TUPOV ATPENDANCE	Tolerance bar + : 0.3
DELIVERY DIFFERENCE	Shutoff solenoid Volt : 12
Rated speed rpm : 1250	
Del. quantity - cm3/1000 strokes : -7.0 -	Rated speed rpm : 600 Supply pomp
Tolerance -	pressure bar : 3.5
cm3/1000 str. +-: 1.0 Shutoff solenoid	Tolerance bar + : 0.3 Shutoff solenoid
Volt : 12	Volt : 12
PRESSURE DIFFERENCE -	OVERFLOW QUANTITY
-	+
Rated speed rpm : 1250 - Del. quantity -	Rated speed rpm : 2250 Overflow quantity
cm3/1000 strokes : -0.2	ccm/10s : 97.2
Tolerance - cm3/1000 str. +-: 0.1	Tolerance
Shutoff solenoid	ccm/10s + : 41.6
Volt : 12 -	Check tolerance
TIMING-DEVICE TRAVEL DIFFERENCE	ccm/10s + : 41.6 Shutoff solenoid
	Volt : 12
Rated speed rpm : 1250 - Del. quantity -	Rated speed rpm : 600
cm3/1000 strokes : -0.7	Overflow quantity
Tolerance - cm3/1000 str. +-: 0.1	ccm/10s : 63.8 Tolerance
Shutoff solenoid	ccm/10s +-: 22.2
Volt : 12	

	1	Talanana
Check tolerance	†	Tolerance cm3/1000 str. +-: 1.0
ccm/10s +:	22.2	
Shutoff solenoid	7	Check tolerance
Volt :	12	cm3/1000s. + : 2.3
VOCE :	12	Shutoff solenoid
SELTHERY AND DOCAMANA	V CHADACTEDIOTES	Volt : 12
DELIVERY AND BREAKAWA	T CHARACTERISTIC +	D
Shake at a search and	1	Rated speed rpm : 600
Rated speed rpm :	2450	Del. quantity
Del. quantity		cm3/1000 strokes : 31.9
cm3/1000 strokes :	24.5	Tolerance
Tolerance	<u> </u>	cm3/1000 str. +: 1.5
cm3/1000 str. +:	3.0	Check tolerance
Check tolerance	†	cm3/1000s. +-: 2.3
cm3/1000s. +-:	4.0	Shutoff solenoid
Shutoff solenoid	+	Volt : 12
Volt :	12	
	+	Rated speed rpm : 1250
Rated speed rpm :	2650	Del. quantity
Del. quantity	+	cm3/1000 strokes : 31.5
cm3/1000 strokes :	9.5	Tolerance
Check tolerance	+	cm3/1000 str. + : 0.5
cm3/1000s. +-:	5.0	Check tolerance
Shutoff solenoid	+	cm3/1000s. + : 2.3
Volt :	12	Shutoff solenoid
	+	Volt : 12
Rated speed rpm :	2950	
Del. quantity	1	
cm3/1000 strokes :	2.5	
Tolerance	1	ELECTR. SHUTOFF
cm3/1000 str. +-:	2.5	CONTROL LEVER, IDLE STOP
Check tolerance	1	
cm3/10003. +-:	2.5	Rated speed rpm : 410
Shutoff solenoid	1	Del. quantity
Volt :	12	cm3/1000 strokes : 1.5
•	1	Tolerance
Rated speed rpm :	2250	cm3/1000 str. +-: 1.5
Del. quantity	1	Check tolerance
cm3/1000 strokes :	32.1	cm3/1000s. + : 1.5
Tolerance	1	Spread
cm3/1000 str. +-:	1.0	cm3/1000 strokes : 5.0
Check tolerance	1	CIIS/ 1000 3t1 0xes
cm3/1000s. +-:	2.3	FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid	I	ATT TAUR DIST COULTINGE TEATIN
Volt :	12	Rated speed rpm : 410
	1	Del. quantity
Rated speed rpm :	1625	cm3/1000 strokes : 1.5
Del augntity	I	
Del. quantity	+	Tolerance
cm3/1000 strokes :	31.0	Tolerance cm3/1000 str. +: 1.5
cm3/1000 strokes : Tolerance	31.0	Tolerance cm3/1000 str. + : 1.5 Spread
cm3/1000 strokes : Tolerance cm3/1000 str. ← :	+	Tolerance cm3/1000 str. + : 1.5 Spread cm3/1000 strokes : 5.0
cm3/1000 strokes : Tolerance cm3/1000 str. ← : Check tolerance	31.0	Tolerance cm3/1000 str. + : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes : Tolerance cm3/1000 str. ← : Check tolerance cm3/1000s. ← :	31.0	Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5
cm3/1000 strokes : Tolerance cm3/1000 str. ← : Check tolerance cm3/1000s. ← : Shutoff solenoid	31.0 1.5 2.3	Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread
cm3/1000 strokes : Tolerance cm3/1000 str. ← : Check tolerance cm3/1000s. ← :	31.0	Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt :	31.0 1.5 2.3 12	Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt :  Rated speed rpm :	31.0 1.5 2.3	Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity	31.0 1.5 2.3 12 2000	Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt :  Rated speed rpm :	31.0 1.5 2.3 12	Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity	31.0 1.5 2.3 12 2000	Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread

CHECKING	LOAD-DEPENDENT
START OF	DELIVERY

## DELIVERY SIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	-9.5
Tolerance		
cm3/1000 str. +	:	2.0
Check tolerance		
cm3/1000s. +-	:	2.0
Shutoff solenoid		40
Volt	:	12

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	-9.7
Tolerance cm3/1000 str. +-	:	0.1
Check tolerance cm3/1000s. +-	:	0.1
Shutoff solenoid Volt	:	12

## DELIVERY DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	5.0
Tolerance		
$cm3/1000 str. \leftarrow$	:	3.0
Check tolerance		
cm3/1000s. +-	:	3.0
Shutoff solenoid		
Volt	:	12

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm :	1250
Tolerance mm +:	0.2
tolerance mm +:	0.3
Shutoff solenoid Volt :	12

## START TRANSITION

Rated speed rpm Del. quantity	:	310
cm3/1000 strokes	:	35.0
Tolerance cm3/1000 str. +-	:	10.0
Shutoff solenoid Volt	:	12

Rated speed rpm : 210 Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 str. + : 15.0

Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	Kmm	: 3,3
Tolerance	mm +-	: +-0,1
Dimension	KF mm	: 5,4
Tolerance		: +-0,2
Dimension	MS mm	: 1,3
Tolerance	mm +-	: +-0,2

## MICROSWITCH

SET

mm : 0,8...3,0 : 14,7..15,5

## CONTROL LEVER POSITION

SET

Control lever

position YA mm : 30,3..34,3

Control lever

position YB mm : 67,1..79,9

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.04.96 Test oil : ISO 4113

Part no. : 0 460 484 114 Pump designation : VE4/8F2300R598-4

Customer-spec. information Customer : RENAULT Motor : F8Q - 620 Power KW : 45.0

## TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C : 45 Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7
Tolerance mm ←: 9.2
Shutoff solenoid
Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250 Supply pomp

pressure bar : 5.5
Tolerance bar + : 0.3

Shutoff solenoid Vult : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm	:	1250
Del. quantity		
cm3/1000 strokes	:	31.5
Tolerance		
cm3/1000 str. +-	:	0.5
Spread		
cm3/1000 strokes	:	2.5
Shutoff solenoid		
Volt	:	12
	-	7.50

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm Del. quantity	:	500
cm3/1000 strokes	:	3.0
Tolerance cm3/1000 str. +- Shutoff solenoid	:	2.0
Volt	:	12

## IDLE DELIVERY

Rated speed rpm	:	410
Del. quantity cm3/1000 strokes	:	9.5
Tolerance cm3/1000 str. +-	•	2.0
Spread	•	
cm3/1000 strokes Shutoff solenoid	•	2.5
Volt	:	12

## HIGH IDLE SETTING

Rated speed rpm	:	500
Del. quantity		
cm3/1000 strokes	:	9.0

Tolerance	1
cm3/1000 str. ←: 2.0	
Shutoff solenoid Volt : 12	+ INJECTION-PUMP TEST SPECIFICATIONS
FULL-LOAD SPEED REGULATION	TIMING DEVICE CHARACTERISTIC
	Rated speed rpm : 2000
Rated speed rpm : 2450 Del. quantity	+ SV travel mm : 6.3
cm3/1000 strokes : 24.5 Tolerance	Tolerance mm + : 0.4 Check
cm3/1000 str. + : 3.0	tolerance mm + : 0.6
Shutoff solenoid Volt : 12	+ Shutoff solenoid + Volt : 12
STARTING FUEL DELIVERY	+ Rated speed rpm : 600
	+
Rated speed rpm : 100 Del. quantity	+ SV travel mm : 1.2 + Tolerance mm +-: 0.4
cm3/1000 strokes : 55.0 Tolerance	+ Check
cm3/1000 str. + : 15.0	<pre>+ tolerance mm +-: 0.6 + Shutoff solenoid</pre>
Shutoff solenoid Volt : 12	† Volt : 12
	SUPPLY PUMP PRESSURE CHARACTERISTIC
LAAN AFRINAFAIT OTART OF RELIVERY	Rated speed rpm : 2000
LOAD-DEPENDENT START OF DELIVERY SETTING	+ Supply pomp + pressure bar : 7.7
NEI THERY DIFFERENCE	† Tolerance bar +-: 0.3
DELIVERY DIFFERENCE	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 1250 Del. quantity	+ Rated speed rpm : 600
cm3/1000 strokes : -7.0	+ Supply pomp
Tolerance cm3/1000 str. +-: 1.0	+ pressure bar : 3.5 + Tolerance bar + : 0.3
Shuroff solenoid	- Shutoff solerioid
Volt : 12	+ Volt : 12
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
Rated speed rpm : 1250 Del. quantity	Rated speed rpm : 2250 Overflow quantity
cm3/1000 strokes : -0.2	+ ccm/10s : 97.2
Tolerance cm3/1000 str. +: 0.1	+ Tolerance + ccm/10s + : 41.6
Shutoff solenoid Volt : 12	Check tolerance
	+ ccm/10s +: 41.6
TIMING-DEVICE TRAVEL DIFFERENCE	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 1250 Del. quantity	+ Rated speed rpm : 600
cm3/1000 strokes : -0.7	+ Overflow quantity
Tolerance cm3/1000 str. + : 0.1	+ ccm/10s : 63.8 + Tolerance
Shutoff solenoid Volt : 12	ccm/10s + : 22.2
	+

		.l Tolonopo
Check tolerance		+ Tolerance + cm3/1000 str. +-: 1.0
ccm/10s +:	22.2	+ Check tolerance
Shutoff solenoid	22.2	+ cm3/1000s. +-: 2.3
Volt :	12	+ Shutoff solenoid
	15.	10.11
DELIVERY AND BREAKAW	AV CHADACTEDISTIC	1 volt : 12
DECITE NO DIENKAW	AT CHARACTERISTIC	Rated speed rpm : 600
Rated speed rpm :	2450	+ Del. quantity
Del. quantity	2430	+ cm3/1000 strokes : 31.9
cm3/1000 strokes :	24.5	+ Tolerance
Tolerance	4.3	+ cm3/1000 str. +-: 1.5
cm3/1000 str. +-:	3.0	+ Check tolerance
Check tolerance	0.0	+ cm3/1000s. +-: 2.3
cm3/1000s. +-:	4.0	+ Shutoff solenoid
Shutoff solenoid	4.0	Volt : 12
Volt :	12	1
,		Rated speed rpm : 1250
Rated speed rpm :	2650	+ Del. quantity
Del. quantity		+ cm3/1000 strokes : 31.5
cm3/1000 strokes :	9.5	+ Tolerance
Check tolerance		+ cm3/1000 str. +-: 0.5
cm3/1000s. +-:	5.0	+ Check tolerance
Shutoff solenoid		+ cm3/1000s. +-: 2.3
Volt :	12	+ Shutoff solenoid
		+ Volt : 12
Rated speed rpm :	2950	+
Del. quantity		+
cm3/1000 strokes :	2.5	+
Tolerance		+ ELECTR. SHUTOFF
cm3/1000 str. +-:	2.5	+ CONTROL LEVER, IDLE STOP
Check tolerance		+
cm3/1000s. +-:	2.5	+ Rated speed rpm : 410
Shutoff solenoid	4.0	+ Del. quantity
Volt :	12	+ cm3/1000 strokes : 1.5
0-4-4	2250	† Tolerance
Rated speed rpm :	2250	+ cm3/1000 str. +: 1.5
Del. quantity cm3/1000 strokes :	32.1	+ Check tolerance
Tolerance	32.1	+ cm3/1000s. + : 1.5
cm3/1000 str. +-:	1.0	+ Spread + cm3/1000 strokes : 5.0
Check tolerance	1.0	T CIIIS/ TOUG SUFOKES : 3.0
cm3/1000s. +-:	2.3	FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid		TOTAL COMPONENT CONTINUE PEACE
Volt :	12	Rated speed rpm : 410
•		Del. quantity
Rated speed rpm :	1625	+ cm3/1000 strokes : 1.5
Del. quantity		+ Tolerance
cm3/1000 strokes :	31.0	+ cm3/1000 str. + : 1.5
Tolerance		+ Spread
cm3/1000 str. +-:	1.5	+ cm3/1000 strokes : 5.0
Check tolerance		+ Check tolerance
cm3/1000s. +-:	2.3	$+ \text{ cm} \frac{3}{1000} \cdot + : 1.5$
Shutoff solenoid	40	+ Spread
Volt :	12	+ cm3/1000 strokes : 5.0
Debad are all	2000	†
Rated speed rpm :	2000	†
Del. quantity cm3/1000 strokes :	32.5	I
ciii Ji Tooo Strokes :	36.3	I

CHECKING LOAD-DEP START OF DELIVERY		Т
DELIVERY DIFFEREN	CE	
Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes Tolerance	:	-9.5
cm3/1000 str. +- Check tolerance	:	3.0
cm3/1000s. +- Shutoff solenoid	:	3.0
Volt	2	12
TIMING-DEVICE TRA	VEL D	IFFERENCE
Rated speed rpm Del. quantity	:	1250
cm3/1000 strokes Tolerance	:	-0.7
cm3/1000 str. +- Check tolerance	:	0.1
cm3/1000s. + Shutoff solenoid	:	0.1
Volt	•	12
DELIVERY DIFFEREN	CE	
Rated speed rpm Del. quantity	:	1250
cm3/1000 strokes Tolerance	:	5.0
cm3/1000 str. +- Check tolerance	:	3.0
cm3/1000s. +- Shutoff solenoid	:	3.0
Volt	:	12
TIMING-DEVICE TRA	/EL D	IFFERENCE
Rated speed rpm Tolerance mm +-	:	1250 0.2
Check tolerance mm +-	:	0.3
Shutoff solenoid Volt	:	12
START TRANSITION		
Rated speed rpm Del. quantity	•	310
	:	35.0
cm3/1000 str. +-	:	10.0

Rated speed rpm Del. quantity	:	210
cm3/1000 strokes	:	6C.C
Tolerance cm3/1000 str. +	:	15.0
Shutoff solenoid Volt	:	12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	Kmm	:	3,3
Tolerance	mm +-	:	0,1
Dimension	KF mm		5,4
Tolerance	mm +	:	+-0,2
Dimension	MS mm	:	1,3
Tolerance	mm +-	•	+-0,2

## MICROSWITCH SET

mm	:	0,8	.3,0
	:	14,7.	.15,5

# CONTROL LEVER POSITION SET

Control lever	
position YA mm	: 30,334,3

Control lever position YB mm : 67,1..79,9

End of test-specification sheet

Shutoff solenoid Volt : 12

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.04.96 : ISC 4113 Test oil

Part no. : 0 460 484 115 Pump designation: VE4/8F2300R598-5

Customer-spec, information Customer : RENAULT : F8Q - 620 CA Motor Power KW 45.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance \*C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-:

Test nozzie holde

: 1 688 901 022 assembly

Opening pressure

bar 130 Tolerance bar +-:

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm 3.7 +-: Tolerance man 0.2 Shutoff solenoid Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Supply pomp

pressure bar 5.5 Tolerance bar + : 0.3 Shutoff solenoid

Volt

12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 31.5 Tolerance  $cm3/1000 str. \leftarrow :$ 0.5 Spread cm3/1000 strokes : 2.5 Shutoff solenoid

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 500 Del. quantity cm3/1000 strokes : 3.0 Tolerance

cm3/1000 str. +-:Shutoff solenoid Volt 12

## IDLE DELIVERY

Volt

Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 9.5 Tolerance cm3/1000 str. + : 2.0 Spread cm3/1000 strokes : 2.5

Shutoff solenoid Volt 12

## HIGH IDLE SETTING

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 9.0

Talanana	
Tolerance cm3/1000 str. +-: 2.0	
Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	THOUGHT OF THE TEST OF ECT TEATTONS
+	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	
2/52	Rated speed rpm : 2000
Rated speed rpm : 2450	014 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Del. quantity cm3/1000 strokes : 24.5	SV travel mm : 6.3 Tolerance mm +-: 9.4
Tolerance	Tolerance mm +-: 0.4 Check
cm3/1000 str. +: 3.0	tolerance mm +-: 0.6
Shutoff solenoid	Shutoff solenoid
Volt : 12	Volt : 12
+	
STARTING FUEL DELIVERY +	Rated speed rpm : 600
Rated speed rpm : 100	SV Approx 1 am 1 2
Rated speed rpm : 100 + Del. quantity +	SV travel mm : 1.2 Tolerance mm +-: 0.4
cm3/1000 strokes : 55.0	Check
Tolerance	tolerance mm +-: 0.6
cm3/1000 str. +-: 15.0	Shutoff solenoid
Shutoff solenoid	Volt : 12
Volt : 12	
†	SUPPLY PUMP PRESSURE CHARACTERISTIC
Ī	Rated speed rpm : 2000
LOAD-DEPENDENT START OF DELIVERY	Supply pomp
SETTING	pressure bar : 7.7
1	Tolerance bar + : 0.3
DELIVERY DIFFERENCE	Shutoff solenoid
1050	Volt : 12
Rated speed rpm : 1250	
Del. quantity	Rated speed rpm : 600
Del. quantity cm3/1000 strokes : -7.0	Rated speed rpm : 600 Supply pomp
Del. quantity	Rated speed rpm : 600 Supply pomp pressure bar : 3.5
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. + : 1.0 Shutoff solenoid	Rated speed rpm : 600 Supply pomp
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. +-: 1.0	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. +- : 1.0 Shutoff solenoid Volt : 12	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. + : 1.0 Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. + : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. + : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2250
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. + : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. + : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. +-: 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. +- : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +- : 0.1 Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +-: 41.6
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. +-: 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +-: 41.6  Check tolerance
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. +- : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +- : 0.1 Shutoff solenoid Volt : 12	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +-: 41.6  Check tolerance ccm/10s +-: 41.6
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. +- : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +- : 0.1 Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +-: 41.6  Check tolerance ccm/10s +-: 41.6 Shutoff solenoid
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. +- : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +- : 0.1 Shutoff solenoid Volt : 12	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +-: 41.6  Check tolerance ccm/10s +-: 41.6 Shutoff solenoid
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. + : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250 Del. quantity	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 600
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. +-: 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.7	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. +- : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +- : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.7 Tolerance	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. +- : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +- : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +- : 0.1	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +-: 41.6  Check tolerance ccm/10s +-: 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. +- : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +- : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +- : 0.1 Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8
Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. +- : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +- : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +- : 0.1	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +-: 41.6  Check tolerance ccm/10s +-: 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance

		Tolonomoo
Check tolerance		+ Tolerance + cm3/1000 str. +-: 1.0
ccm/10s +-	: 22.2	Check tolerance
Shutoff solenoid		+ cm3/1000s. +-: 2.3
Volt	: 12	+ Shutoff solenoid
		+ Volt : 12
DELIVERY AND BREAK	AWAY CHARACTERISTIC	†
0 4 4	2/50	+ Rated speed rpm : 600
Rated speed rpm	: 2450	Del. quantity
Del. quantity cm3/1000 strokes	24.5	+ cm3/1000 strokes : 31.9 + Tolerance
Tolerance	. 24.5	cm3/1000 str. +-: 1.5
cm3/1000 str. +-	: 3.0	Check tolerance
Check tolerance		+ cm3/1000s. + : 2.3
cm3/1000s. +-	: 4.0	+ Shutoff solenoid
Shutoff solenoid		† Volt : 12
Volt	: 12	1050
Pated speed nom	: 2650	Rated speed rpm : 1250
Rated speed rpm Del. quantity	. 2000	+ Del. quantity + cm3/1000 strokes : 31.5
cm3/1000 strokes	: 9.5	Tolerance
Check tolerance	•	cm3/1000 str. +: 0.5
cm3/1000s. +-	: 5.0	+ Check tolerance
Shutoff solenoid		+  cm3/1000s. + : 2.3
Volt	: 12	+ Shutoff solenoid
Patral agency was	2050	+ Volt : 12
Rated speed rpm Del. quantity	: 2950	
cm3/1000 strokes	: 2.5	I
Tolerance	. 2.3	+ ELECTR. SHUTOFF
cm3/1000 str. +-	: 2.5	CONTROL LEVER, IDLE STOP
Check tolerance		+
cm3/1000s. +	: 2.5	+ Rated speed rpm : 410
Shutoff solenoid Volt	: 12	+ Del. quantity
VOLL	12	+ cm3/1000 strokes : 1.5 + Tolerance
Rated speed rpm	: 2250	cm3/1000 str. +: 1.5
Del. quaritity		Check tolerance
cm3/1000 strokes	: 32.1	+ cm3/1000s. +-: 1.5
Tolerance		Spread
cm3/1000 str. +-	: 1.0	cm3/1000 strokes : 5.0
Check tolerance	: 2.3	+ FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid	. 6.3	T FULL LOAD STOP CONTROL LEVER
Volt	: 12	Rated speed rpm : 410
	-	- Del. quantity
	: 1625	- cm3/1000 strokes : 1.5
Del. quantity	74.0	+ Tolerance
cm3/1000 strokes	: 31.0	+ cm3/1000 str. +: 1.5
Tolerance cm3/1000 str. +-	: 1.5	+ Spread + cm3/1000 strokes : 5.0
Check tolerance	• 1.5	+ Check tolerance
cm3/1000s. +-	2.3	- cm3/1000s. +-: 1.5
		Spread
Shutoff solenoid		
Shutoff solenoid Volt	: 12	cm3/1000 strokes : 5.0
Volt	: 12	
Volt Rated speed rpm		
Volt Rated speed rpm Del. quantity	: 12 : 2000	
Volt Rated speed rpm	: 12 : 2000	

# CHECKING LOAD-DEPENDENT START OF DELIVERY

## DELIVERY DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	-9.5
Tolerance		7.0
cm3/1000 str. +- Check tolerance	:	3.0
cm3/1000s. +-	:	3.0
Shutoff solenoid Volt	:	12

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Dei. quantity		
cm3/1000 strokes	:	-0.7
Tolerance		
cm3/1000 str. +-	:	0.1
Check tolerance		
cm3/1000s. +-	:	0.1
Shutoff solenoid		
Volt	:	12
Volt	:	12

## DELIVERY DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	5.0
Tolerance		7.0
cm3/1000 str. +-	:	3.0
cm3/1000s. +-	:	3.0
Shutoff solenoid Volt		12
VOC C		16

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm Tolerance mm +-	:	1250 0.2
Check tolerance mm +-	:	0.3
Shutoff solenoid Volt	:	12

#### START TRANSITION

Rated speed rpm	:	310
Del. quantity cm3/1000 strokes	:	35.0
Tolerance cm3/1000 str. +-	8	10.0
Shutoff solenoid Volt	:	12

Rated	speed	rpm	:	210
Del o	lithaeur	-v		

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 str. + : 15.0

Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension		:	3,3
Tolerance	mm +		+-0,1
Dimension	KF mm	:	5,4
Tolerance	mm +-	:	+-0,2
Dimension	MS mm	•	1,3
Tolerance	mm +-	:	+-0,2

## MICROSWITCH

SET

mm : 0,8...3,0 : 14,7...15,5

# CONTROL LEVER POSITION SET

Control lever

position YA mm : 30,3..34,3

Control lever

position YB mm : 67,1..79,9

BOSCH INJ. PUMP TEST SPECIFICATIONS			
Note remarks			
Refer to Service Info for test and adjustment instructions. See microcard(s) W400/			
Edition : 16.04.96 Test oil : ISO 4113			
Part no. : 0 460 484 116 Pump designation : VE4/8F2300R598-6			
Customer-spec. information Customer : RENAULT Motor : F8Q - 620 DDS Power KW : 45.0			
TEST BENCH REQUIREMENTS			
Calibrating-oil return temperature °C : 45 Tolerance °C +-: 1			
Overflow restriction mm : 0.55			
<pre>Inlet press. bar : 0.35 Tolerance bar + : 0.05</pre>			
Test nozzle holde assembly : 1 688 901 022			
Opening pressure : 130 Tolerance bar + : 3			
Test lines : 1 680 750 073			
Outside diameter : 6.00			
x inside diameter: 2.00 x length mm : 450			
REMARKS			

TIMING DEVICE TRA	VEL		
Rated speed rpm	:	1250	
Setting mm Tolerance mm + Shutoff solenoid	:	3.7 0.2	
Volt	:	12	
SUPPLY PUMP PRESS	JRE		
Rated speed rpm Supply pomp	:	1250	
pressure bar Tolerance bar + Shutoff solenoid	:	5.5 0.3	
Volt	:	12	
FULL-LOAD DELIV.	<b>√</b> ITH	OUT BOOST	PRESSURE
Rated speed rpm Del. quantity	:	1250	
cm3/1000 strokes Tolerance	:	31.5	
cm3/1000 str. +-	:	0.5	
cm3/1000 strokes Shutoff solenoid	:	2.5	
Volt	:	12	
HOUSING-FIXED IDLE RESIDUAL QUANTITY			
Rated speed rpm Del. quantity	:	500	
cm3/1000 strokes Tolerance	:	3.0	
cm3/1000 str. +- Shutoff solenoid	:	2.0	
Volt	:	12	
IDLE DELIVERY			
Rated speed rpm Del. quantity	:	410	
cm3/1000 strokes Tolerance	:	9.5	
cm3/1000 str. +- Spread	:	2.0	
cm3/1000 strokes Shutoff solenoid	:	2.5	
Volt	:	12	
HIGH IDLE SETTING			

Rated speed rpm : Del. quantity cm3/1000 strokes :

500

9.0

INJECTION PUMP SETTING VALUES

Tolerance cm3/1000 str. +-: 2.0	t
Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	+ + Rated speed rpm : 2000
Rated speed rpm : 2450 Del. quantity	+ SV travel mm : 6.3
cm3/1000 strokes : 24.5 Tolerance	Tolerance mm + : 0.4 + Check
cm3/1000 str. + : 3.0 Shutoff solenoid	tolerance mm +: 0.6 Shutoff solenoid
Volt : 12	+ Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 600
Rated speed rpm : 100 Del. quantity	SV travel mm : 1.2 Tolerance mm +-: 0.4
cm3/1000 strokes : 55.0	+ Check
Tolerance cm3/1000 str. + : 15.0	+ tolerance mm +-: 0.6 + Shutoff solenoid
Shutoff solenoid Volt : 12	+ Volt : 12
	SUPPLY PUMP PRESSURE CHARACTERISTIC
LOAD-DEPENDENT START OF DELIVERY	Rated speed rpm : 2000 Supply pomp
SETTING	pressure bar : 7.7
DELIVERY DIFFERENCE	Tolerance bar +: 0.3 Shutoff solenoid
Rated speed rpm : 1250	+ Volt : 12
Del. quantity cm3/1000 strokes : -7.0	Rated speed rpm : 600 Supply pomp
Tolerance cm3/1000 str. + : 1.0	+ pressure bar : 3.5
Shutoff solenoid	Tolerance bar + : 0.3 Shutoff solenoid
Volt : 12	+ Volt : 12
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
Rated speed rpm : 1250  Del. quantity	Rated speed rpm : 2250 Overflow quantity
cm3/1000 strokes : -0.2 Tolerance	ccm/10s : 97.2 Tolerance
cm3/1000 str. +: 0.1 Shutoff solenoid	ccm/10s + : 41.6
Volt : 12	Check tolerance + : 41.6
TIMING-DEVICE TRAVEL DIFFERENCE	Shutoff solenoid Volt : 12
Rated speed rpm : 1250 Del. quantity	Rated speed rpm : 600
cm3/1000 strokes : -0.7	Overflow quantity
Tolerance cm3/1000 str. + : 0.1	+ ccm/10s : 63.8 + Tolerance
Shutoff solenoid : 12	- ccm/10s +-: 22.2

	1 1
Chook to laware	+ Tolerance
Check tolerance ccm/10s +: 22.2	+ cm3/1000 str. +-: 1.0
Shutoff solenoid	+ Check tolerance
Volt : 12	+ cm3/1000s. + : 2.3
voct : 12	+ Shutoff solenoid
DEL TUEDA AND DESCRIPTION OF THE PROTECTION	† Volt : 12
DELIVERY AND BREAKAWAY CHARACTERISTIC	†
Date day 1 0450	+ Rated speed rpm : 600
Rated speed rpm : 2450	+ Del. quantity
Del. quantity	+ cm3/1000 strokes : 31.9
cm3/1000 strokes : 24.5	+ Tolerance
Tolerance	+ cm3/1000 str. +: 1.5
cm3/1000 str. + : 3.0	+ Check tolerance
Check tolerance	+ cm3/1000s. +-: 2.3
cm3/1000s. + : 4.0	+ Shutoff solenoid
Shutoff solenoid	† Volt : 12
Volt : 12	†
	+ Rated speed rpm : 1250
Rated speed rpm : 2650	+ Del. quantity
Del. quantity	+ cm3/1000 strokes : 31.5
cm3/1000 strokes : 9.5	† Tolerance
Check tolerance	+  cm3/1000  str. + : 0.5
cm3/1000s. +-: 5.0	+ Check tolerance
Shutoff solenoid	+ cm3/1000s. +-: 2.3
Volt : 12	† Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 2950	t
Del. quantity	†
cm3/1000 strokes : 2.5	
Tolerance	ELECTR. SHUTOFF
Tolerance cm3/1000 str. + : 2.5	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
Tolerance cm3/1000 str. + : 2.5 Check tolerance	CONTROL LEVER, IDLE STOP
Tolerance cm3/1000 str. + : 2.5 Check tolerance cm3/1000s. + : 2.5	CONTROL LEVER, IDLE STOP Rated speed rpm : 410
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity
Tolerance cm3/1000 str. + : 2.5 Check tolerance cm3/1000s. + : 2.5	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2250	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. +-: 1.5
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2250 Del. quantity	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. +-: 1.5  Check tolerance
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 32.1	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. +-: 1.5  Check tolerance  cm3/1000s. +-: 1.5
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 32.1 Tolerance	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. +-: 1.5  Check tolerance  cm3/1000s. +-: 1.5  Spread
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm: 2250 Del. quantity cm3/1000 strokes: 32.1 Tolerance cm3/1000 str. +: 1.0	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. +-: 1.5  Check tolerance  cm3/1000s. +-: 1.5
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm: 2250 Del. quantity cm3/1000 strokes: 32.1 Tolerance cm3/1000 str. +: 1.0 Check tolerance	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm: 2250 Del. quantity cm3/1000 strokes: 32.1 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.3	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. +-: 1.5  Check tolerance  cm3/1000s. +-: 1.5  Spread
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 32.1 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm: 2250 Del. quantity cm3/1000 strokes: 32.1 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.3	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm: 2250 Del. quantity cm3/1000 strokes: 32.1 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12	Rated speed rpm : 410  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm: 2250 Del. quantity cm3/1000 strokes: 32.1 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  Rated speed rpm: 1625	Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm: 2250 Del. quantity cm3/1000 strokes: 32.1 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  Rated speed rpm: 1625 Del. quantity	Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm: 2250 Del. quantity cm3/1000 strokes: 32.1 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  Rated speed rpm: 1625	Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm: 2250 Del. quantity cm3/1000 strokes: 32.1 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  Rated speed rpm: 1625 Del. quantity cm3/1000 strokes: 31.0 Tolerance cm3/1000 strokes: 31.0 Tolerance cm3/1000 str. +: 1.5	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm: 2250 Del. quantity cm3/1000 strokes: 32.1 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  Rated speed rpm: 1625 Del. quantity cm3/1000 strokes: 31.0 Tolerance	Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Spread
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm: 2250 Del. quantity cm3/1000 strokes: 32.1 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  Rated speed rpm: 1625 Del. quantity cm3/1000 strokes: 31.0 Tolerance cm3/1000 strokes: 31.0 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 2.3	Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm: 2250 Del. quantity cm3/1000 strokes: 32.1 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  Rated speed rpm: 1625 Del. quantity cm3/1000 strokes: 31.0 Tolerance cm3/1000 strokes: 31.0 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid	Rated speed rpm : 410  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm: 2250 Del. quantity cm3/1000 strokes: 32.1 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  Rated speed rpm: 1625 Del. quantity cm3/1000 strokes: 31.0 Tolerance cm3/1000 strokes: 31.0 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 2.3	Rated speed rpm : 410  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +-: 1.5
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 32.1 Tolerance cm3/1000s. +: 1.0 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  Rated speed rpm : 1625 Del. quantity cm3/1000 strokes : 31.0 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12	Rated speed rpm : 410  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm: 2250 Del. quantity cm3/1000 strokes: 32.1 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  Rated speed rpm: 1625 Del. quantity cm3/1000 strokes: 31.0 Tolerance cm3/1000 strokes: 31.0 Tolerance cm3/1000 strokes: 31.0 Tolerance cm3/1000 strokes: 2.3 Shutoff solenoid Volt : 12  Rated speed rpm: 2000	Rated speed rpm : 410  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread
Tolerance cm3/1000 str. +: 2.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 32.1 Tolerance cm3/1000s. +: 1.0 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  Rated speed rpm : 1625 Del. quantity cm3/1000 strokes : 31.0 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12	Rated speed rpm : 410  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread

CHECKING LOAD-DEP START OF DELIVERY		NT
DELIVERY DIFFEREN	CE	
Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	-9.5
Tolerance cm3/1000 str. +- Check tolerance	:	3.0
cm3/1000s. +- Shutoff solenoid	:	3.0
Volt	:	12
TIMING-DEVICE TRA	VEL.	DIFFERENCE
Rated speed rpm Del. quantity	:	1250
cm3/1000 strokes Tolerance	:	-0.7
cm3/1000 str. +-	:	0.1
cm3/1000s. +- Shutoff solenoid	:	0.1
Volt	:	12
DELIVERY DIFFEREN	CE	
Rated speed rpm Del. quantity	:	1250
cm3/1000 strokes Tolerance	:	5.0
cm3/1000 str. +- Check tolerance	:	3.0
cm3/1000s. +- Shutoff sclenoid	:	3.0
Volt	:	12
TIMING-DEVICE TRA	VEL	DIFFERENCE
Rated speed rpm Tolerance mm +	:	1250 0.2
Check tolerance mm +	:	0.3
Shutoff solenoid Volt	:	12
START TRANSITION		
		740
Rated speed rpm Del. quantity	:	310
cm3/1000 strokes Tolerance	:	35.0
cm3/1000 str. +	:	10.0
Shutoff solenoid Volt		12

Rated speed rpm : 210
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 str. + : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 5,4
Tolerance mm + : +0,2
Dimension MS mm : 1,3
Tolerance mm + : +0,2

MICROSWITCH SET

mm : 0,8.3,0 : 14,7..15,5

CONTROL LEVER POSITION SET

Control lever

position YA mm : 30,3..34,3

Control Lever

position YB mm : 67,1..79,9

End of test-specification sheet

F01

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.04.96 Test oil : ISO 4113

Part no. : 0 460 484 117 Pump designation : VE4/8F230OR598-7

Customer—spec. information Customer : RENAULT

Motor : F8Q - 620 CA DDS

Power KW : 45.0

## TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Supply pomp

pressure bar : 5.5 Tolerance bar + : 0.3

Shutoff solenoid

Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 31.5

Tolerance

cm3/1000 str. +-: 0.5 Spread

cm3/1000 strokes : 2.5 Shutoff solenoid

Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 str. +: 2.0

Shutoff solenoid Volt : 12

## IDLE DELIVERY

Rated speed rpm : 410 Del. quantity

cm3/1000 strokes : 9.5 Tolerance

cm3/1000 str. +:

Spread cm3/1000 strokes : 2.5

2.0

Shutoff solenoid Volt : 12

## HIGH IDLE SETTING

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 9.0

<b>*</b> 1	•
Tolerance cm3/1000 str. +-: 2.0	†
Shutoff solenoid	INJECTION—PUMP TEST SPECIFICATIONS
Volt : 12	+ INDECTION FOR TEST SPECIFICATIONS
	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	+
Rated speed rpm : 2450	Rated speed rpm : 2000
Del. quantity	SV travel mm : 6.3
cm3/1000 strokes : 24.5	+ Tolerance mm + : 0.4
Tolerance	Check
cm3/1000 str. +: 3.0	+ tolerance mm +-: 0.6
Shutoff solenoid Volt : 12	+ Shutoff solenoid + Volt : 12
, 12	† Volt : 12
STARTING FUEL DELIVERY	+ Rated speed rpm : 600
	+
Rated speed rpm : 100	+ SV travel mm : 1.2
Del. quantity cm3/1000 strokes : 55.0	+ Tolerance mm + : 0.4 + Check
Tolerance	tolerance mm +-: 0.6
cm3/1000 str. + : 15.0	+ Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
	T SOFFET FOMP PRESSURE CHARACTERISTIC
	Rated speed rpm : 2000
LOAD-DEPENDENT START OF DELIVERY	+ Supply pomp
SETTING	+ pressure bar : 7.7
DELIVERY DIFFERENCE	+ Tolerance bar + : 0.3 + Shutoff solenoid
ACCTACUL NILL CUCIACE	Volt : 12
Rated speed rpm : 1250	+
Del. quantity	+ Rated speed rpm : 600
cm3/1000 strokes : -7.0 Tolerance	+ Supply pomp
cm3/1000 str. +-: 1.0	+ pressure bar : 3.5 Tolerance bar + : 0.3
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
DDECCHOE ATEFFERICE	OUEDS OF OTHER
PRESSURE DIFFERENCE	+ OVERFLOW QUANTITY
Rated speed rpm : 1250	Rated speed rpm : 2250
Del. quantity	+ Overflow quantity
cm3/1000 strokes : -0.2	+ ccm/10s : 97.2
Tolerance cm3/1000 str. +-: 0.1	+ Tolerance + ccm/10s +-: 41.6
Shutoff solenoid	T
Volt : 12	+ Check tolerance
	+ ccm/10s +: 41.6
TIMING-DEVICE TRAVEL DIFFERENCE	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 1250	+ Volt : 12
Del. quantity	Rated speed rpm : 600
cm3/1000 strokes : -0.7	Overflow quantity
Tolerance cm3/1000 str. +-: 0.1	+ ccm/10s : 63.8 + Tolerance
Shutoff solenoid	+ ccm/10s + : 22.2
Volt : 12	+
	+

	ı		
Check tolerance	†	Tolerance	
	2.2	cm3/1000 str. +-: 1.0	
Shutoff solenoid		Check tolerance	
Volt :	12	cm3/1000s. +-: 2.3 Shutoff solenoid	
vocc .			
DELIVERY AND BREAKAWAY CH		Volt : 12	
OCCITACIO NO DICENNAMI CIN	T I	Rated speed rpm : 600	
Rated speed rpm : 245	n I	Del. quantity	
Del. quantity	ĭ	cm3/1000 strokes : 31.9	
	4.5	Tolerance	
Tolerance	1	cm3/1000 str. +-: 1.5	
	3.0	Check tolerance	
Check tolerance	1	cm3/1000s. +-: 2.3	
	4.0	Shutoff solenoid	
Shutoff solenoid		Volt : 12	
Volt :	12	1	
		Rated speed rpm : 1250	
Rated speed rpm : 265	0 1	Del. quantity	
Del. quantity	1	cm3/1000 strokes : 31.5	
cm3/1000 strokes :	9.5	Tolerance	
Check tolerance	+	cm3/1000 str. + : 0.5	
	5.0	Check tolerance	
Shutoff solenoid	+	cm3/1000s. +-: 2.3	
Volt :		Shutoff solenoid	
		Volt : 12	
Rated speed rpm : 295	0 +		
Del. quantity	- +		
	2.5		
Tolerance	+	ELECTR. SHUTOFF	
	2 -		
cm3/1000 str. +-:	2.5	CONTROL LEVER, IDLE STOP	
cm3/1000 str. +-: Check tolerance	+	CONTROL LEVER, IDLE STOP	
cm3/1000 str. +-: Check tolerance cm3/1000s. +-:	2.5	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410	
cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid	2.5	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410  Del. quantity	
cm3/1000 str. +-: Check tolerance cm3/1000s. +-:	2.5	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5	
cm3/1000 str. +-: Check tolerance cm3/1000S. +-: Shutoff solenoid Volt :	2.5	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :	2.5	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity	2.5	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity	2.5 12 0 2.1	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 30	2.5 12 0 2.1	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 36 Tolerance cm3/1000 str. + : Check tolerance	2.5 12 0 2.1 1.0	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 30 Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	2.5 12 0 2.1	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 30 Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid	2.5 12 0 2.1 1.0 2.3	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 30 Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	2.5 12 0 2.1 1.0 2.3	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER Rated speed rpm : 410	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 30 Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :	2.5 12 0 2.1 1.0 2.3	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 337 Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 1625	2.5 12 0 2.1 1.0 2.3 12	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 36 Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 1625 Del. quantity	2.5 12 0 2.1 1.0 2.3 12	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 330 Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 1620 Del. quantity cm3/1000 strokes : 330	2.5 12 0 2.1 1.0 2.3 12 5	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 30 Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 1620 Del. quantity cm3/1000 strokes : 30 Tolerance	2.5 12 0 2.1 1.0 2.3 12 5	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Spread	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 30 Tolerance cm3/1000s. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 1620 Del. quantity cm3/1000 strokes : 30 Tolerance cm3/1000 strokes : 30 Tolerance cm3/1000 strokes : 30 Tolerance cm3/1000 strokes : 30	2.5 12 0 2.1 1.0 2.3 12 5 1.0	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0	
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cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 360 Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 1620 Del. quantity cm3/1000 strokes : 360 Tolerance cm3/1000 strokes : 360 Tolerance cm3/1000 strokes : 360 Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	2.5 12 0 2.1 1.0 2.3 12 5 1.0 1.5 2.3	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +-: 1.5	
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cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 36 Tolerance cm3/1000s. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 1620 Del. quantity cm3/1000 strokes : 36 Tolerance cm3/1000 strokes : 36 Tolerance cm3/1000 strokes : 36 Tolerance cm3/1000 strokes : 36 Shutoff solenoid	2.5 12 0 2.1 1.0 2.3 12 5 1.0 1.5 2.3	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +-: 1.5	
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cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 36 Tolerance cm3/1000s. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 1625 Del. quantity cm3/1000 strokes : 36 Tolerance cm3/1000 strokes : 36 Tolerance cm3/1000 strokes : 36 Tolerance cm3/1000 strokes : 36 Check tolerance cm3/1000s. + : Check tolerance	2.5 12 0 2.1 1.0 2.3 12 5 1.0 1.5 2.3	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5 Spread	
cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 36 Tolerance cm3/1000s. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : 1625 Del. quantity cm3/1000 strokes : 36 Tolerance cm3/1000 strokes : 36 Tolerance cm3/1000 strokes : 36 Tolerance cm3/1000 strokes : 36 Check tolerance cm3/1000s. + : Check tolerance	2.5 12 0 2.1 1.0 2.3 12 5 1.0 1.5 2.3 12	CONTROL LEVER, IDLE STOP  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5 Spread	

## CHECKING LOAD-DEPENDENT START OF DELIVERY

## DELIVERY DIFFERENCE

:	1250
	-9.5
•	7.7
:	2.0
:	2.0
:	12

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Del. quantity		
cm3/1000 strokes		-0.7
Tolerance		
cm3/1000 str. +	:	0.1
Check tolerance		
cm3/1000s. +-	:	0.1
Shutoff solenoid		
Volt	:	12

#### DELIVERY DIFFERENCE

Rated speed rpm Del. quantity	:	1250
cm3/1000 strokes	:	5.0
Tolerance cm3/1000 str. +	:	3.0
Check tolerance cm3/1000s. +-	:	3.0
Shutoff solenoid Volt	:	12

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Tolerance mm +	-:	0.2
Check		
tolerance mm +	-:	0.3
Shutoff solenoid		
Volt	:	12

#### START TRANSITION

Rated speed rpm Del. quantity	:	310
cm3/1000 strokes	:	35.0
Tolerance cm3/1000 str. +-	:	10.0
Shutoff solenoid Volt	:	12

Rated	speed	rpm	:	210
Dol -		L		

vet. qua	iii i i i y		
cm3/1000	strokes	:	60.0

Tolerance : 60.

cm3/1000 str. +: 15.0 Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	K mm	: 3,3
Tolerance	mm +-	: +-0,1
Dimension	KF mm	: 5,4
Tolerance	min +-	: +-0,2
Dimension		: 1,3
Tolerance	mm +-	: +-0,2

## MICROSWITCH SET

mm

: 0,8..3,0 : 14,7..15,5

# CONTROL LEVER POSITION

Control lever

position YA mm : 30,3..34,3

Control lever

position YB mm : 67,1..79,9

End of test-specification sheet

F05

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.04.96 Test oil : ISO 4113

Part no. : 0 460 494 357 Pump designation : VE4/9F2400R581

Customer-spec. information Customer : RENAULT Motor : G8T - 752 Power KW : 59.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

#### REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0
Tolerance mm + : +-0,02
Outlet : C

## INJECTION PUMP SETTING VALUES

# TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.5
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Supply pomp
pressure bar : 6.2
Tolerance bar + : 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 37.4
Tolerance
cm3/1000 str. +-: 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 str. + : 2.0
Shutoff solenoid
Volt : 12

#### IDLE DELIVERY

Rated speed rpm : 385
Del. quantity
cm3/1000 strokes : 14.0
Tolerance
cm3/1000 str. + : 2.0
Spread
cm3/1000 strokes : 2.5

Shutoff solenoid Volt : 12	+ Rated speed rpm : 1250 + Del. quantity
HIGH IDLE SETTING	+ cm3/1000 strokes : -0.8 + Tolerance
Rated speed rpm : 435	+ cm3/1000 str. +-: 0.1 + Shutoff solenoid
Del. quantity cm3/1 <b>000</b> strokes : 12.0	Volt : 12
Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Rated speed rpm : 2000
Rated speed rpm : 2600 Del. quantity	SV travel mm : 6.4 Tolerance nm +-: 0.4
cm3/1000 strokes : 23.0 Tolerance	Check tolerance mm +: 0.6
cm3/1000 str. +: 3.0 Shutoff solenoid	Shutoff solenoid Volt : 12
Volt : 12	Rated speed rpm : 1000
STARTING FUEL DELIVERY	+
Rated speed rpm : 100 Del. quantity	+ SV travel mm : 1.0 + Tolerance mm +-: 0.4 + Check
cm3/1000 strokes : 60.0 Tolerance	tolerance mm +-: 0.6 Shutoff solenoid
cm3/1000 str. +-: 15.0 Shutoff solenoid	Volt : 12
Volt : 12	Rated speed rpm : 750
LOAD-DEPENDENT START OF DELIVERY	+ SV travel mm : 1.0 + Tolerance mm + : 1.2 + Check
SETTING	tolerance mm +: 1.2 Shutoff solenoid
DELIVERY DIFFERENCE	+ Volt : 12
Rated speed rpm : 1250 Del. quantity	KSB/AFB Volt : 12
cm3/1000 strokes : -7.1 Tolerance	SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 str. +-: 1.0 Shutoff solenoid	Rated speed rpm : 2000 Supply pomp
Volt : 12	pressure bar : 8.2 + Tolerance bar + : 0.3
PRESSURE DIFFERENCE	Shutoff solenoid Volt : 12
Rated speed rpm : 1250 Del. quantity	Rated speed rpm : 750
cm3/1000 strokes : -0.2 Tolerance	Supply pomp pressure bar : 4.7
cm3/1000 str. +-: 0.1 Shutoff solenoid	Tolerance bar +: 0.3 Shutoff solenoid
Volt : 12	Volt : 12
TIMING-DEVICE TRAVEL DIFFERENCE	OVERFLOW QUANTITY
	ı

Rated speed rpm	: 2300	+ Check tolerance
Overflow quantity ccm/10s	: 97.2	+ cm3/1000s. +-: 2.3 + Shutoff solenoid
Tolerance		Volt : 12
ccm/10s +-	: 41.6	+ Rated speed rpm : 1000
Check tolerance		+ Del. quantity
ccm/10s +- Shutoff solenoid	: 41.6	t cm3/1000 strokes : 37.7 Tolerance
Volt	: 12	+ cm3/1000 str. +-: 1.5
Rated speed rpm	: 750	+ Check tolerance + cm3/1000s. +-: 2.3
Overflow quantity ccm/10s	: 63.8	+ Shutoff solenoid + Volt : 12
Tolerance		+
ccm/10s +-	: 22.2	+ Rated speed rpm : 2000 + Del. quantity
Check tolerance	. 22.2	- cm3/1000 strokes : 40.3
ccm/10s +- Shutoff solenoid	: 22.2	+ Tolerance + cm3/1000 str. +-: 1.0
Volt	: 12	+ Check tolerance
DELIVERY AND BREAK	AWAY CHARACTERISTIC	$+$ cm3/1000S. $\div$ : 2.3 + Shutoff solenoid
		+ Volt : 12
Rated speed rpm Del. quantity	: 2600	+ Rated speed rpm : 750
cm3/1000 strokes	: 23.0	+ Del. quantity
Tolerance cm3/1000 str. +-	: 3.0	cm3/1000 strokes : 36.5 Tolerance
Check tolerance	. 5.0	cm3/1000 str. +-: 1.5
cm3/1000s. +- Shutoff solenoid	: 4.0	Check tolerance
Volt	: 12	+ cm3/1000s. +-: 2.3 + Shutoff solenoid
Detect aread are	. 2500	+ Volt : 12
Rated speed rpm Del. quantity	: 2500	† Rated speed rpm : 1250
cm3/1000 strokes	: 35.5	- Del. quantity
Tolerance cm3/1000 str. +-	: 4.0	+ cm3/100C strokes : 37.4 + Tolerance
Check tolerance		- cm3/1000 str. +-: 0.5
cm3/1000s. +- Shutoff solenoid	: 5.0	+ Check tolerance + cm3/1000s. +-: 2.3
Volt	: 12	+ Shutoff solenoid
Rated speed rpm	: 2800	† Volt : 12
Del. quantity		+
cm3/1000 strokes Tolerance	: 2.5	ELECTR. SHUTOFF
cm3/1000 str. +-	: 2.5	CONTROL LEVER, IDLE STOP
Check tolerance cm3/1000s. +-	: 2.5	+ Rated speed rpm : 385
Shutoff solenoid		+ Del. quantity
Volt	: 12	+ cm3/1000 strokes : 1.5 + Tolerance
Rated speed rpm	: 2300	- cm3/1000 str. +-: 1.5
Del. quantity cm3/1000 strokes	: 41.0	+ Check tolerance + cm3/1000s. +-: 1.5
Tolerance cm3/1000 str. +-	: 1.0	+ Spread + cm3/1000 strokes : 5.0
J		+

FULL-LOAD STOP CONTROL LEVER	Rated speed rpm : 1250 Tolerance mm +-: 0.2
Rated speed rpm : 385  Del. quantity	Check tolerance mm +-: 0.3
cm3/1000 strokes : 1.5	Shutoff solenoid
Tolerance + : 1.5	Volt : 12
Spread	
cm3/1000 strokes : 5.0 + Check tolerance	EXHAUST-GAS RECIRCULATION
cm3/1000s. +-: 1.5 Spread	Rated speed rpm : 1250 Del. quantity
cm3/1000 strokes : 5.0	cm3/1000 strokes : 23.0 Tolerance
+	cm3/1000 str. +-: 0.5
†	Check tolerance
<u>†</u>	cm3/1000s. +-: 2.5 Shutoff solenoid
	Volt : 12
CHECKING LOAD-DEPENDENT	. 12
START OF DELIVERY	START TRANSITION
DELIVERY DIFFERENCE	Rated speed rpm : 350 Del. quantity
Rated speed rpm : 1250 Del. quantity	cm3/1000 strokes : 30.0 Tolerance
cm3/1000 strokes : -9.4	cm3/1000 str. +-: 15.0
Tolerance +	Shutoff solenoid
cm3/1000 str. + : 2.0 + Check tolerance	Volt : 12
cm3/1000s. +: 2.0	
Shutoff solenoid	Rated speed rpm : 200
Volt : 12	Del. quantity cm3/1000 strokes : 70.0
TIMING-DEVICE TRAVEL DIFFERENCE	Tolerance
+	cm3/1000 str. +-: 25.0
Rated speed rpm : 1250 + Del. quantity +	Shutoff solenoid
cm3/1000 strokes : -0.8	Volt : 12
Tolerance + cm3/1000 str. +: 0.1	ACCEMBLY AND AD MOTHER DIMENOTONS
Check tolerance	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000s. +: 0.1	Dimension K mm : 3,7
Shutoff solenoid + Volt : 12 +	Tolerance mm +-: +-0,1
Volt : 12	Dimension KF mm : 6,0 Tolerance mm +-: +-0,2
DELIVERY DIFFERENCE	Dimension MS mm : 0,8
+	Tolerance mm +: +-0,2
Rated speed rpm : 1250 + Del. quantity +	·
cm3/1000 strokes : 5.0 +	MICROSWITCH
Tolerance + cm3/1000 str. + : 3.0 +	SET
Check tolerance +	mm : 0,83,0
cm3/1000s. +: 3.0 + Shutoff solenoid	: ARF 12,0
Volt : 12	CONTROL LEVER POSITION SET
TIMING-DEVICE TRAVEL DIFFERENCE	SET

Control lever

position YA mm : 37,2..41,2

Control lever position YB mm : 61,3..69,7

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.04.96 Test oil : ISO 4113

Part no. : 0 460 494 358
Pump designation : VE4/9F2400R581-1

Customer-spec. information
Customer : RENAULT
Motor : G8T - 752 CA
Power KW : 59.0

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

#### REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0
Tolerance mm +- : +-0,02
Outlet : C

## INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.5

Tolerance mm +-: 0.2

Shutoff solenoid

Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Supply pomp
pressure bar : 6.2
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 37.4
Tolerance
cm3/1000 str. + : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 str. + : 2.0
Shutoff solenoid
Volt : 12

#### IDLE DELIVERY

Rated speed rpm : 385
Del. quantity
cm3/1000 strokes : 14.0
Tolerance
cm3/1000 str. + : 2.0
Spread
cm3/1000 strokes : 2.5

Shutoff solenoid	+ Rated speed rpm : 1250
Volt : 12	+ Del. quantity
HIGH IDLE SETTING	+ cm3/1000 strokes : -0.8 + Tolerance
	+ cm3/1000 str. +-: 0.1
Rated speed rpm : 435 Del. quantity	+ Shutoff solenoid + Volt : 12
cm3/1000 strokes : 12.0	12
Tolerance cm3/1000 str. ← : 2.0	INJECTION—PUMP TEST SPECIFICATIONS
Shutoff solenoid	+ INSECTION FORM TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Rated speed rpm : 2000
Rated speed rpm : 2600	SV travel mm : 6.4
Del. quantity cm3/1000 strokes : 23.0	+ Tolerance mm +-: 0.4 + Check
Tolerance	tolerance mm +-: 0.6
cm3/1000 str. +-: 3.0 Shutoff solenoid	- Shutoff solenoid
Volt : 12	+ Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 1000
STARTING FOEL DELIVERY	T SV travel mm : 1.0
Rated speed rpm : 100	+ Tolerance mm +-: 0.4
Del. quantity cm3/1000 strokes : 60.0	+ Check + tolerance mm + : 0.6
Tolerance	+ Shutoff solenoid
cm3/1000 str. +-: 15.0 Shutoff solenoid	+ Volt : 12
Volt : 12	Rated speed rpm : 750
	+ SV travel mm : 1.0
LOAD-DEPENDENT START OF DELIVERY	+ Tolerance mm +-: 1.2 + Check
SETTING	+ tolerance mm +-: 1.2
DELIVERY DIFFERENCE	+ Shutoff solenoid + Volt : 12
	<del>}</del>
Rated speed rpm : 1250 Del. quantity	+ KSB/AFB Volt : 12
cm3/1000 strokes : -7.1 Tolerance	SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 str. + : 1.0 Shutoff solenoid	Rated speed rpm : 2000 Supply pomp
Volt : 12	pressure bar : 8.2
PRESSURE DIFFERENCE	+ Tolerance bar +-: 0.3 + Shutoff solenoid
Rated speed rpm : 1250	† Volt : 12
Del. quantity	Rated speed rpm : 750
cm3/1000 strokes : -0.2	Supply pomp
Tolerance cm3/1000 str. +-: 0.1	+ pressure bar : 4.7 + Tolerance bar + : 0.3
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
TIMING-DEVICE TRAVEL DIFFERENCE	OVERFLOW QUANTITY

Detail aread are 2700	•		
Rated speed rpm : 2300	†	Check tolerance	2.7
Overflow quantity	†	cm3/1000s. +:	2.3
ccm/10s : 97	• 4	Shutoff solenoid	4.5
Tolerance	<u> </u>	Volt :	12
ccm/10s +-: 41	.6		
	+	Rated speed rpm :	1000
Check tolerance	+	Del. quantity	
ccm/10s + : 41	.6 +	cm3/1000 strokes :	37.7
Shutoff solenoid	+	Tolerance	
Volt :	12 🗼	cm3/1000 str. +-:	1.5
	+	Check tolerance	
Rated speed rpm : 750	1	cm3/1000s. +-:	2.3
Overflow quantity	1	Shutoff solenoid	
ccm/10s : 63	.8 🗼	Volt :	12
Tolerance			
ccm/10s	2	Rated speed rpm :	2000
,	1	Del. quantity	2000
Check tolerance	T	cm3/1000 strokes :	40.3
ccm/10s +-: 22	2		40.5
Shutoff solenoid	• 7	Tolerance	1.0
	12 T	cm3/1000 str. +-:	1.0
Volt :	12	Check tolerance	2.7
AFI TITOU AND BEENVALING OUR	<b>†</b>	cm3/1000s. +:	2.3
DELIVERY AND BREAKAWAY CHA	RACIERISTIC +	Shutoff solenoid	4.5
	†	Volt :	12
Rated speed rpm : 2600	+		
Del. quantity	+	Rated speed rpm :	750
cm3/1000 strokes : 23	ئ- 0.	Del. quantity	
Tolerance	+	cm3/1000 strokes :	<b>36.</b> 5
cm3/1000 str. +-: 3	.0 +	Tolerance	
Check tolerance	+	cm3/1000 str. +:	1.5
cm3/1000s. +-: 4	.0 +	Check tolerance	
Shutoff solenoid	J.	cm3/1000s. +:	2.3
Volt :	12 🗼	Shutoff solenoid	
	1	Volt :	12
Rated speed rpm : 2500	1		
Del. quantity	1	Rated speed rpm :	1250
cm3/1000 strokes : 35	.5	Del. quantity	, = 0
Tolerance	1	cm3/1000 strokes :	37.4
	.0	Tolerance	31.4
Check tolerance	I	cm3/1000 str. +-:	0.5
	.0 I	Check tolerance	0.9
Shutoff solenoid	·• T		2.3
	12	cm3/1000s. + : Shutoff solenoid	2.3
voct .	' <sup>2</sup>		12
Rated speed rpm : 2800	<b>T</b>	Volt :	16
	Ť		
Del. quantity cm3/1000 strokes : 2	.5		
	• 7	ELECTR CHUTOE	
Tolerance	<u> </u>	ELECTR. SHUTOFF	0700
	.5	CONTROL LEVER, IDLE	S10P
Check tolerance	_	5	705
	.5	Rated speed rpm :	385
Shutoff solenoid	†	Del. quantity	4 5
Volt :	12	cm3/1000 strokes :	1.5
	†	Tolerance	A ==
Rated speed rpm : 2300	+	cm3/1000 str. +-:	1.5
	4	Check tolerance	
Del. quantity	_		<b>.</b> –
cm3/1000 strokes : 41.	.o ‡	cm3/1000s. +-:	1.5
cm3/1000 strokes : 41. Tolerance	+	cm3/1000s. +-: Spread	
cm3/1000 strokes : 41. Tolerance	.0	cm3/1000s. +-:	1.5 5.0
cm3/1000 strokes : 41. Tolerance	+	cm3/1000s. +-: Spread	

	1
FULL-LOAD STOP CONTROL LEVER	Rated speed rpm : 1250 Tolerance mm +-: 0.2
Rated speed rpm : 385 Del. quantity	+ Check
cm3/1000 strokes : 1.5	tolerance mm +-: 0.3 Shutoff solenoid
Tolerance cm3/1000 str. +: 1.5	+ Volt : 12
Spread cm3/1000 strokes : 5.0	EXHAUST-GAS RECIRCULATION
Check tolerance cm3/1000s. +-: 1.5	+
Spread	+ Del. quantity
cm3/1000 strokes : 5.0	cm3/1000 strokes : 23.0 Tolerance
	+ cm3/1000 str. +-: 0.5 + Check tolerance
	cm3/1000s. +-: 2.5 Shutoff solenoid
CHECKING LOAD-DEPENDENT	Volt : 12
START OF DELIVERY	START TRANSITION
DELIVERY DIFFERENCE	Rated speed rpm : 350 Del. quantity
Rated speed rpm : 1250 Del. quantity	cm3/1000 strokes : 30.0 Tolerance
cm3/1000 strokes : -9.4 Tolerance	- cm3/1000 str. +-: 15.0 - Shutoff solenoid
cm3/1000 str. +: 2.0 Check tolerance	Volt : 12
cm3/1000s. +-: 2.0	
Shutoff solenoid Volt : 12	+ Rated speed rpm : 200 + Del. quantity
TIMING-DEVICE TRAVEL DIFFERENCE	cm3/1000 strokes : 70.0 Tolerance
Rated speed rpm : 1250	+ cm3/1000 str. +-: 25.0 + Shutoff solenoid
tel. quantity cm3/1000 strokes : -0.8	// // : 12
Tolerance cm3/1000 str. +-: 0.1	ASSEMBLY AND ADJUSTMENT DIMENSIONS
Check tolerance	+
cm3/1000s. +: 0.1 Shutoff solenoid	+ Dimension K mm : 3,7 Tolerance mm +-: +-0,1
Volt : 12	<pre>Dimension KF mm : 6,0 Tolerance mm +-: +-0,2</pre>
DELIVERY DIFFERENCE	Dimension MS mm : 0,8 Tolerance mm + : +-0,2
Rated speed rpm : 1250 Del. quantity	<u> </u>
cm3/1000 strokes : 5.0 Tolerance	MICROSWITCH SET
cm3/1000 str. + : 3.0 Check tolerance	+
cm3/1000s. + : 3.0	mm : 0,83,0 : ARF 12,0
Shutoff solenoid Volt : 12	CONTROL LEVER POSITION SET
	1

TIMING-DEVICE TRAVEL DIFFERENCE

Control lever position YA mm : 37,2..41,2

Control lever

position YB mm : 61,3..69,7

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.04.96 Test oil : ISO 4113

Part no. : 0 460 404 086 Pump designation : VE4/10F2100L414-2

Customer—spec. information Customer : VM

Motor : 425 SLTRS Power KW : 77.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

## REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

Setting nm : 2.2
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 4.5
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm	:	1500
Aneroid pressure hPa	:	1000
Del. quantity		
cm3/1000 strokes	:	59.5
Tolerance		
cm3/1000 str. +-	:	0.5
Spread		
cm3/1000 strokes	:	3.0
Check tolerance		
cm3/1000s.	:	3.0
Shutoff solenoid		
Volt	:	12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm Del. quantity	:	700
cm3/1000 strokes	:	43.5
Tolerance cm3/1000 str. +-	:	0.5
Shutoff solenoid Volt	:	12
Check tolerance cm3/1000s.	:	3.0

## IDLE SETTING

Rated speed rpm Del. quantity	:	450
cm3/1000 strokes	:	15.0
Tolerance cm3/1000 str. +-	:	2.0
Shutoff solenoid Volt	:	12

Spread	+ Aneroid pressure
cm3/1000 strokes : 3.0	+ hPa : 1000
Check tolerance	Del. quantity
cm3/1000s. : 3.0	+ cm3/1000 strokes : -0.9
	+ Tolerance
	+ cm3/1000 str. +-: 0.1
	+ Shutoff solenoid
FIRE LOAD OPERS PROMETERS	+ Volt : 12
FULL-LOAD SPEED REGULATION	+
Poted speed spe	
Rated speed rpm : 2300 Pressure hPa : 1000	+ INJECTION-PUMP TEST SPECIFICATIONS
Pressure hPa : 1000 Del. quantity	+
cm3/1000 strokes : 43.0	+ TIMING DEVICE CHARACTERISTIC
Tolerance	†
cm3/1000 str. + : 3.0	+ Rated speed rpm : 1500
Shutoff solenoid	Aneroid pressure
Volt : 12	† hPa : 1000
•	+ SV travel mm : 4.6
STARTING FUEL DELIVERY	+ SV travel mm : 4.6 + Tolerance mm +-: 0.4
	- Check
Rated speed rpm : 100	tolerance mm +-: 0.7
Del. quantity	+ Shutoff solenoid
cm3/1000 strokes : 65.0	+ Volt : 12
Tolerance cm3/1000 str. +-: 15.0	+ =
Shutoff solenoid	+ Rated speed rpm : 700
Volt : 12	+ Aneroid pressure
, 12	† hPa : 1000
	T CV Amount on
	SV travel mm : 1.1
LOAD-DEPENDENT START OF DELIVERY	+ Tolerance mm ++: 0.4 + Check
SETTING	tolerance mm: +-: 0.7
	+ Shutoff solenoid
DELIVERY DIFFERENCE	+ Volt : 12
D	+
Rated speed rpm : 1500	Rated speed rpm : 2100
Pressure hPa : 1000	+ Aneroid pressure
Del. quantity	+ hPa : 1000
cm3/1000 strokes : -25.0 Tolerance	+
cm3/1000 str. + : 1.0	+ SV travel mm : 6.6
Shutoff solenoid	Tolerance mm + : 0.4
Volt : 12	Check
	+ tolerance mm +-: 0.7 + Shutoff solenoid
PRESSURE DIFFERENCE	+ Volt : 12
	. 12
Rated speed rpm : 1500	SUPPLY PUMP PRESSURE CHARACTERISTIC
Aneroid pressure	
hPa : 1000	Rated speed rpm : 2100
Del. quantity cm3/1000 strokes : -0.2	+ Aneroid pressure
Tolerance	† hPa : 1000
cm3/1000 str. +-: 0.1	+ Supply pomp
Shutoff solenoid	pressure bar : 7.5
Volt : 12	Tolerance bar +: 0.3
v 16	Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE	+ Volt : 12
	Rated speed rpm : 700
Rated speed rpm : 1500	- Nacea speed (piii . 100
	· ·

Aneroid pressure	4000	+	Rated speed rpm	:	700	
hPa Supply pomp	: 1000	1	Aneroid pressure hPa		500	
pressure bar	: 3.6	Ι	IIIra	•	500	
Tolerance bar +-		Ι	LDA/			
Shutoff solenoid	. 0.5	Ι	HBA stroke mm		5.7	
Volt	: 12	Ţ		•	3.1	
VOCC	. 12	Ţ	Del. quantity		57 O	
OVERFLOW QUANTITY		Ť	cm3/1000 strokes	:	57.0	
OVERPLOW GONIALTIE		Ť	Tolerance		0.5	
Rated speed rpm	: 2100	T	cm3/1000 str. +-	:	0.5	
Aneroid pressure	λ 2100	T	Check tolerance		2 -	
hPa	: 1000	T	cm3/1000s. +-	•	2.5	
Overflow quantity		T	Shutoff solenoid		10	
ccm/10s	: 97.2	T	Volt	÷	12	
Tolerance	. 71.6	Ť	Datad annual num		2400	
ccm/10s +	: 41.6	†	Rated speed rpm	:	2100	
compros —	: 41.6	†	Aneroid pressure		4000	
Charle to Language		†	hPa	:	1000	
Check tolerance	. /1 /	†	Del. quantity		50.5	
ccm/10s +-	: 41.6	†	cm3/1000 strokes	:	58.5	
Shutoff solenoid	. 13		Tolerance		4.5	
Valt	: 12	†	cm3/1000 str. +-	:	1.5	
Seted enced mus	. 700	†	Check tolerance		7.0	
Rated speed rpm	: 700	†	cm3/1000s. +-	•	3.0	
Aneroid pressure	. 1000	†	Shutoff solenoid		40	
hPa	: 1000	†	Volt	:	12	
Overflow quantity		†	Batad and I was		700	
ccm/10s	: 63.8	†	Rated speed rpm	:	700	
Tolerance	. 22.2	†	Aneroid pressure		4000	
ccm/10s +-	: 22.2	+	hPa	•	1000	
Charle halamana		†	Del. quantity		40.5	
Check tolerance	. 22.2	†	cm3/1000 strokes	:	60.5	
com/10s +	: 22.2	+	Tolerance		4.5	
Shutoff solenoid	. 13	†	cm3/1000 str. +-	:	1.5	
Volt	: 12	†	Check tolerance		7.0	
ACITIVEDY AND DOCA	ZALIAN GUADAGTEDTOTTO	†	cm3/1000s. +-	:	3.0	
DELIVERY AND BREAK	KAWAY CHARACTERISTIC	†	Shutoff solenoid		40	
Dated aread are	. 2760	1	Volt	:	12	
Rated speed rpm	: 2300	†	Dated and description		4500	
Aneroid pressure	1000	<b>†</b>	Rated speed rpm	:	1500	
hPa	: 1000	<b>†</b>	Aneroid pressure		4000	
Del. quantity	. /7.0	†	hPa	:	1000	
cm3/1000 strokes Tolerance	: 43.0	<b>T</b>	Del. quantity		50 F	
cm3/1000 str. +-	: 3.0	<b>T</b>	cm3/1000 strokes	:	59.5	
Check tolerance	. 5.0	T	Tolerance cm3/1000 str. +		0.5	
cm3/1000s. +-	: 4.0	T	Check tolerance	•	0.5	
Shutoff solenoid	. 4.0	I	cm3/1000s. +-		2.0	
Volt	: 12	T	Shutoff solenoid	•	2.0	
VOCC	. 12	I	Volt		12	
Rated speed rpm	: 2550	I	VULL	•	12	
Aneroid pressure	. 2000	I				
hPa	: 1000	I				
nra Del. quantity	. 1000	I	ELECTR. SHUTOFF	,_,_		
cm3/1000 strokes	: 4.0	I		E 0	TOD	
Check tolerance	. 4.0	T	CONTROL LEVER, ID	_E	IUP	
cm3/1000s. +-	: 4.0	I	Dated speed par		450	
Shutoff solenoid	. 4.0	I	Rated speed rpm Del. quantity	:	430	
Volt	: 12	Ţ	cm3/1000 strokes		1.5	
VOLL	. 16	Ι	CIIIS/ (UUU Strokes	•	1.3	
		T				

Tolerance +	Check tolerance
cm3/1000 str. +: 1.5	cm3/1000s. +-: 3.0
Check tolerance	Shutoff solenoid
cm3/1000s. +: 1.5 Spread	Volt : 12
cm3/1000 strokes : 5.0 +	TIMING-DEVICE TRAVEL DIFFERENCE
FULL-LOAD STOP CONTROL LEVER	Rated speed rpm : 1500
+	Aneroid pressure
Rated speed rpm : 450 +	hPa : 1000 Del. quantity
cm3/1000 strokes : 1.5	cm3/1000 strokes : -0.9 Tolerance
cm3/1000 str. +: 1.5	cm3/1000 str. + : 0.1
cm3/1000 strokes : 5.0	Check tolerance cm3/1000s. +-: 0.1
Check tolerance	Shutoff solenoid
cm3/1000s. +: 1.5 Spread	Volt : 12
cm3/1000 strokes : 5.0	DELIVERY DIFFERENCE
IDLE DELIVERY	Rated speed rpm : 1500 Aneroid pressure
Rated speed rpm : 600	hPa : 1800
Del. quantity	Del. quantity
cm3/1000 strokes : 2.5	cm3/1000 strokes : 5.0 Tolerance
cm3/1000 str. +: 2.5	cm3/1000 str. + : 3.0
Check tolerance + : 2.5 +	Check tolerance cm3/1000s. +-: 3.0
Shutoff solenoid	Shutoff solenoid
Volt : 12	Volt : 12
Rated speed rpm : 500 Del. quantity	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes : 5.0 +	Rated speed rpm : 1500
Tolerance	Aneroid pressure
cm3/1000 str. +-: 2.5	hPa : 1000
Check tolerance cm3/1000s. +: 3.0	Tolerance mm + : 0.3 Check
Shutoff solenoid	tolerance mm + : 0.3
Volt : 12	Shutoff solenoid
‡	Volt : 12
+	
	EXHAUST-GAS RECIRCULATION
CHECKING LOAD-DEPENDENT	Rated speed rpm : 1000
START OF DELIVERY	Aneroid pressure
DELIVERY DIFFERENCE	hPa : 1000 Del. quantity
+	cm3/1000 strokes : 43.5
Rated speed rpm : 1500 Aneroid pressure	Tolerance cm3/1000 str. + : 0.5
hPa : 1000 + Del. quantity	Check tolerance cm3/1000s. +-: 2.5
cm3/1000 strokes : -30.5	Shutoff solenoid
Tolerance +	Volt : 12
cm3/1000 str. +-: 3.0	
+	START TRANSITION

Rated speed rpm : 550 Del. quantity cm3/1000 strokes : 42.0 Tolerance cm3/7000 str. +: 10.0 Shutoff solenoid Volt 12 Rated speed rpm : 40C Del. quantity cm3/1000 strokes : 60.0

Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 5.7
Dimension K mm : 3,3
Tolerance mm + : +-0,1
Dimension KF mm : 5,4
Tolerance mm + : +-0,2
Dimension MS mm : 0,8
Tolerance mm + : +-0,2
TLA travel mm : 12,7

MICROSWITCH SET

: ARF 12,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 38,8..40,8

Control lever

position YB mm : 38,6..48,4

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 29,04,96 : ISO 4113 Test oil

: 0 460 494 437 Pump designation: VE4/9F2250R593-6

Customer-spec. information Customer : RENAULT Motor : 68T - 760Power KW 81.0

## TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C 45 Tolerance °C +:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + :

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

bar 130 Tolerance bar +:

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm 450

#### REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm 1250

Aneroid pressure

hPa 1000

Setting mm 2.8 Tolerance mm 0.2 Shutoff solenoid 12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 1250

Aneroid pressure

hPa. 1000

Supply pomp pressure bar 5.4 Tolerance bar +-: 0.3

Shutoff solenoid

Volt 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

: 1250 Rated speed rpm

Aneroid pressure

hPa. 1000

Del. quantity

cm3/1000 strokes : 58.7

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s.3.0

Shutoff solenoid

Volt 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

0.5

Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 43.0

Tolerance

cm3/1000 str. +-:

Shutoff solenoid

Volt

12

Check tolerance

cm3/1000s. 3.0

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450

Del. quantity

7.0

cm3/1000 strokes :

Tolerance

cm3/1000 str. +-: 2.0

Shutoff solenoid Volt : 12	Shutoff solenoid Volt : 12
IDLE DELIVERY	+ PRESSURE DIFFERENCE
Rated speed rom : 350	Rated speed rpm : 1250
Del. quantity cm3/1000 strokes : 22.5	+ Del. quantity + cm3/1000 strokes : -0.2
Tolerance cm3/1000 str. +-: 2.0 Spread	<pre>+ Tolerance + cm3/1000 str. +-: 0.1 - Shutoff solenoid</pre>
cm3/1000 strokes : 2.5 Shutoff solenoid	Volt : 12
Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE
HIGH IDLE SETTING	Rated speed rpm : 1250 Del. quantity
Rated speed rpm : 400 Del. quantity	cm3/1000 strokes : -0.7 Tolerance
cm3/1000 strokes : 23.5 Tolerance	cm3/1000 str. + : 0.1 Shutoff solenoid
cm3/1000 str. + : 2.0 Shutoff solenoid	+ Volt : 12
Volt : 12	INJECTION-PUMP TEST SPECIFICATIONS
FULL-LOAD SPEED REGULATION	TIMING DEVICE CHARACTERISTIC
Rated speed rpm : 2450	+
Pressure hPa : 1000 Del. quantity	+ Rated speed rpm : 2150 + Aneroid pressure
cm3/1000 strokes : 30.0 Tolerance	hPa : 1000
cm3/1000 str. +-: 3.0	+ SV travel mm : 5.9
Shutoff solenoid	+ Tolerance mm + : 0.4
Volt : 12	+ Check + tolerance mm +→: 0.6
SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP	+ Shutoff solenoid + Volt : 12
CONTROL LEVER, IDLE STOP	Rated speed rpm : 1000
Rated speed rpm : 100	+ Aneroid pressure
Del. quantity cm3/1000 strokes : 52.0	† hPa : 1000
Tolerance	SV travel mm : 1.9
cm3/1000 str. + : 1.0 Shutoff solenoid	↑ Tolerance mm +-: 0.4 Check
Volt : 12	tolerance mm +: 0.6 Shutoff solenoid
LOAD APPENDENT START OF ACITUMOV	+ Volt : 12
LOAD-DEPENDENT START OF DELIVERY SETTING	Rated speed rpm : 600
DELIVERY DIFFERENCE	Aneroid pressure hPa : 1000
Rated speed rpm : 1250	SV travel mm : 2.7
Del. quantity cm3/1000 strokes : -8.5	+ Tolerance mm + : 1.2 + Check
Tolerance cm3/1000 str. +-: 1.0	tolerance mm + : 1.2 Shutoff solenoid
	+ Volt : 12

	1 01 1 66 1 1		
KSB/AFB Volt : 12	+ Shutoff solenoid + Volt	•	12
SUPPLY PUMP PRESSURE CHARACTER:	+	:	2525
Rated speed rpm : 2150	Aneroid pressure	-	1000
Aneroid pressure	Del. quantity	•	1000
hPa : 1000 Supply pomp	+ cm3/1000 strokes + Check tolerance	:	8.0
pressure bar : 7.6	- cm3/1000s. +	-:	5.0
Tolerance bar + : 0.3 Shutoff solenoid	+ Shutoff solenoid		40
Volt : 12	† Volt	:	12
Rated speed rpm : 500	+ Rated speed rpm + Aneroid pressure		2600
Aneroid pressure	hPa	:	1000
hPa : 1000 Supply pomp	Del. quantity		2.5
pressure bar : 3.5	+ cm3/1000 strokes Tolerance	:	2.5
Tolerance bar +: 0.3	- cm3/1000 str. +	-:	2.5
Shutoff solenoid Volt : 12	+ Check tolerance + cm3/1000s. +	- :	2.5
	- Shutoff solenoid	•	
OVERFLOW QUANTITY	† Volt	:	12
Rated speed rpm : 500 Overflow quantity	Rated speed rpm Aneroid pressure	:	750
ccm/10s : 63.8	+ hPa	:	300
Tolerance ccm/10s + : 22.2	+ LDA/		
CCIII/ 105 +	+ HBA stroke mm	:	7.3
Check tolerance ccm/10s + : 22.2	Del. quantity		50.0
ccm/10s + : 22.2 Shutoff solenoid	+ cm3/1000 strokes + Tolerance	:	50.0
Volt : 12	+ cm3/1000 str. +	-:	0.5
Rated speed rpm : 2150	+ Check tolerance + cm3/1000s. +	- :	2,3
Aneroid pressure	Shutoff solenoid		
hPa : 1000 Overflow quantity	Volt	:	12
ccm/10s : 97.2	Rated speed rpm	:	2150
Tolerance ccm/10s +-: 41.6	+ Aneroid pressure + hPa	:	1000
Observation to the server of	Del. quantity	-	
Check tolerance ccm/10s +: 41.6	+ cm3/1000 strokes + Tolerance	:	56.7
Shutoff solenoid	+ cm3/1000 str. +	-:	1.0
Volt : 12	+ Check tolerance + cm3/1000s. +	- :	2.3
DELIVERY AND BREAKAWAY CHARACTE	+ Shutoff solenoid	•	
Rated speed rpm : 2450	Volt	:	12
Aneroid pressure	Rated speed rpm	:	1000
hPa : 1000 Del. quantity	+ Aneroid pressure + hPa	:	1000
cm3/1000 strokes : 30.0	+ Del. quantity	·	
Tolerance cm3/1000 str. +-: 3.0	+ cm3/1000 strokes + Tolerance	:	59.6
Check tolerance	cm3/1000 str. +	-:	1.5
cm3/1000s. +-: 4.0	+		

Check tolerance cm3/1000s. +-: 2.3	
Shutoff solenoid Volt : 12 -	CHECKING LOAD-DEPENDENT
Rated speed rpm : 500	START OF DELIVERY
Aneroid pressure hPa : 1000 -	DELIVERY DIFFERENCE
Del. quantity cm3/1000 strokes : 57.2	Rated speed rpm : 1250 Del. quantity
Tolerance cm3/1000 str. +-: 1.5	cm3/1000 strokes : -11.0 Tolerance
Check tolerance - cm3/1000s. + : 2.3 -	cm3/1000 str. +-: 2.5 Check tolerance
Shutoff solenoid Volt : 12 -	cm3/1000s. +-: 2.5 Shutoff solenoid
Rated speed rpm : 1250 Aneroid pressure	Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE
hPa : 1000 - Del. quantity	Rated speed rpm : 1250
cm3/1000 strokes : 58.7 Tolerance	Del. quantity - cm3/1000 strokes : -0.7
cm3/1000 str. +-: 0.5 Chesk tolerance	Tolerance
cm $3/1000$ S. $+:$ 2.3 -Shutoff solenoid -	Check tolerance cm3/1000s. +-: 0.1
Volt : 12 -	Shutoff solenoid Volt : 12
1	DEL TAMENA DE TERRES DE LA CONTRACTOR DE
ELECTO CUUTOES	DELIVERY DIFFERENCE
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	Rated speed rpm : 1250
CONTROL LEVER, IDLE STOP  Rated speed rpm : 350	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 5.0
CONTROL LEVER, IDLE STOP  Rated speed rpm : 350  Del. quantity - cm3/1000 strokes : 1.5	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 5.0  Tolerance  cm3/1000 str. +-: 3.0
CONTROL LEVER, IDLE STOP  Rated speed rpm : 350  Del. quantity	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 5.0  Tolerance  cm3/1000 str. + : 3.0  Check tolerance  cm3/1000s. + : 3.0
CONTROL LEVER, IDLE STOP  Rated speed rpm : 350  Del. quantity - cm3/1000 strokes : 1.5  Tolerance - cm3/1000 str. +-: 1.5  Check tolerance - cm3/1000s. +-: 1.5  Spread	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 5.0  Tolerance  cm3/1000 str. +-: 3.0  Check tolerance
CONTROL LEVER, IDLE STOP  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 5.0  Tolerance cm3/1000 str. + : 3.0  Check tolerance cm3/1000s. + : 3.0  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE
Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 5.0  Tolerance cm3/1000 str. + : 3.0  Check tolerance cm3/1000s. + : 3.0  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250 Tolerance mm + : 0.2
Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 5.0  Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250 Tolerance mm + : 0.2 Check tolerance mm + : 0.3
Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 5.0  Tolerance cm3/1000 str. + : 3.0  Check tolerance cm3/1000s. + : 3.0  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250 Tolerance mm + : 0.2 Check
Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Spread	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 5.0  Tolerance cm3/1000 str. + : 3.0  Check tolerance cm3/1000s. + : 3.0  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250 Tolerance mm + : 0.2 Check tolerance mm + : 0.3 Shutoff solenoid Volt : 12
Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 5.0  Tolerance cm3/1000 str. + : 3.0  Check tolerance cm3/1000s. + : 3.0  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250 Tolerance mm + : 0.2 Check tolerance mm + : 0.3 Shutoff solenoid Volt : 12  START TRANSITION
Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 5.0  Tolerance cm3/1000 str. + : 3.0  Check tolerance cm3/1000s. + : 3.0  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250 Tolerance mm + : 0.2 Check tolerance mm + : 0.3 Shutoff solenoid Volt : 12

Shutoff solenoid

Volt 12

Rated speed rpm : 180

Del. quantity

cm3/1000 strokes : 54.0

Tolerance

cm3/1000 str. + : 10.0

Shutoff solenoid

Volt 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm 7.3

Dimension K mm : 3,7 Tolerance mm +:+0,1Dimension KF mm : 6,0 Tolerance mm +:+0,2Dimension MS mm : 0,9

Tolerance mm +:+0.2

POTENTIOMETER SET

1. measurement

voltage Volt : 5,0

1. measurement

voltage Volt : 4,5

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.02.96 Test oil : ISO 4113

Part no. : 0 460 494 354 Pump designation : VE4/9F2150R577

Customer—spec. information
Customer : NISSAN—MISA

Motor : GX-3
Power KW : 53.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1200

Setting mm : 3.2
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1200 Supply pomp

pressure bar : 5.9
Tolerance bar + : 0.3
Shutoff solenoid

Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 2150
Del. quantity
cm3/1000 strokes : 44.5
Tolerance
cm3/1000 str. +-: 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

## IDLE SETTING

Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid 12 Volt Spread cm3/1000 strokes : 2.5 Check tolerance 3.0 cm3/1000s.•

## FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 str. + : 3.0
Shutoff solenoid
Volt : 12

## STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity cm3/1000 strokes : 60.0	+ Shutoff solenoid + Volt : 12
Tolerance	+ 12
cm3/1000 str. +: 15.0	Rated speed rpm : 600
Shutoff solenoid Volt : 12	+ Overflow quantity + ccm/10s : 63.8
vocc . 12	+ ccm/10s : 63.8 + Tolerance
	+ ccm/10s + : 22.2
	+
	+ Check tolerance
INJECTION-PUMP TEST SPECIFICATIONS	+ ccm/10s +-: 22.2 + Shutoff solenoid
THOUGHTON COM TEST OF ESTATISMS	+ Volt : 12
TIMING DEVICE CHARACTERISTIC	+
Dated around non- a 2050	† DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 2150	+ Rated speed rpm : 2500
SV travel mm : 9.2	+ Del. quantity
Tolerance mm + : 0.4	+ cm3/1000 strokes : 15.0
Check	+ Tolerance
tolerance mm +-: 0.7 Shutoff solenoid	+ cm3/1000 str. + : 3.0 + Check tolerance
Volt : 12	+ cm3/1000s. + : 4.5
, ,,,	+ Shutoff solenoid
Rated speed rpm : 900	+ Volt : 12
SV travel mm : 1.2	Rated speed rpm : 2350
Tolerance mm + : 0.4	+ Del. quantity
Check	+ cm3/1000 strokes : 33.3
tolerance mm + : 0.7	† Tolerance
Shutoff solenoid Volt : 12	cm3/1000 str. + : 4.0 + Check tolerance
. 12	+ cm3/1000s. +-: 5.5
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Shutoff solenoid
2452	+ Volt : 12
Rated speed rpm : 2150 Supply pomp	t Dated anada man a 2700
pressure bar : 8.7	+ Rated speed rpm : 2700 + Del. quantity
Tolerance bar +-: 0.3	+ cm3/1000 strokes : 2.5
Shutoff solenoid	+ Tolerance
Volt : 12	+ cm3/1000 str. + : 2.5
Rated speed rpm : 900	+ Check tolerance + cm3/1000s. +-: 2.5
Supply pomp	+ Shutoff solenoid
pressure bar : 5.0	+ Volt : 12
Tolerance bar + : 0.3	†
Shutoff solenoid Volt : 12	Rated speed rpm : 900
volt : 12	+ Del. quantity + cm3/1000 strokes : 42.2
OVERFLOW QUANTITY	+ Tolerance
	+ cm3/1000 str. +-: 1.5
Rated speed rpm : 2150	+ Check tolerance
Overflow quantity ccm/10s : 97.2	+ cm3/1000s. +-: 2.5 + Shutoff solenoid
Tolerance	+ Volt : 12
ccm/10s +: 41.6	+
	Rated speed rpm : 1200
Check tolerance	+ Del. quantity + cm3/1000 strokes : 43.2
ccm/10s +-: 41.6	

Tolerance	
cm3/1000 str. +-: 1.5	cm3/1000 strokes : 5.0
Check tolerance	Check tolerance
cm3/1000s. + : 2.5	
Shutoff solenoid	
Volt : 12	Spread
, ,,,	cm3/1000 strokes : 5.0
Rated speed rpm : 1800	<del> </del>
Del. quantity	IDLE DELIVERY
	+
	- Rated speed row : 800
Tolerance	Del. quantity
cm3/1000 str. + : 1.5	cm3/1000 strokes : 2.5
Check tolerance	Tolerance
cm3/1000s. + : 2.5	cm3/1000 str. +-: 2.5
Shutoff solenoid	Check tolerance
Valt : 12	cm3/1000s. + : 2.5
Rated speed rpm : 600	Shutoff solenoid
Del. quantity	Volt : 12
cm3/1000 strokes : 41.0	
Tolerance	Rated speed rpm : 500
cm3/1000 str. +: 1.5	Del. quantity
Check tolerance	- cm3/1000 strokes : 1.5
	Tolerance
	$\frac{1}{1000}$ cm3/1000 str. $+$ : 1.5
Shutoff solenoid	Check tolerance
Volt : 12	cm3/1000s. +-: 1.5
	Shutoff solenoid
Rated speed rpm : 2150	Volt : 12
Del. quantity	. 12
cm3/1000 strokes : 44.5	
CIID/ 1000 Stirkes : 44.5	
Tolerance	
Tolerance cm3/1000 str. +-: 0.5	
Tolerance cm3/1000 str. +-: 0.5 Check tolerance	
Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 1.3	
Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 1.3 Shutoff solenoid	EXHAUST-GAS RECIRCULATION
Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 1.3	EXHAUST-GAS RECIRCULATION
Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 1.3 Shutoff solenoid	
Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 1.3 Shutoff solenoid	Del. quantity
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000S. +: 1.3 Shutoff solenoid Volt : 12	Del. quantity cm3/1000 strokes : 0.80
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF	Del. quantity - cm3/1000 strokes : 0.80 - Tolerance
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000S. +: 1.3 Shutoff solenoid Volt : 12	Del. quantity - cm3/1000 strokes : 0.80 - Tolerance - cm3/1000 str. +- : 0.02
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375	Del. quantity - cm3/1000 strokes : 0.80 - Tolerance - cm3/1000 str. +- : 0.02
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance cm3/1000s. +- : 0.10
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance cm3/1000s. +- : 0.10  START TRANSITION
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance cm3/1000s. +- : 0.10  START TRANSITION  Rated speed rpm : 400
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance cm3/1000s. +- : 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance cm3/1000s. +- : 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 45.0
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance cm3/1000s. +- : 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 45.0 Tolerance
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance cm3/1000s. +- : 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 45.0 Tolerance cm3/1000 str. +- : 20.0
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance cm3/1000s. +- : 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 45.0 Tolerance cm3/1000 str. +- : 20.0
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance cm3/1000s. +- : 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 45.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance cm3/1000s. +- : 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 45.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance cm3/1000s. +- : 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 45.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +-: 0.02 Check tolerance cm3/1000s. +-: 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 45.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance cm3/1000s. +- : 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 45.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +- : 0.02 Check tolerance cm3/1000s. +- : 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 45.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 270 Del. quantity
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375 Del. quantity	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +-: 0.02 Check tolerance cm3/1000s. +-: 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 45.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 270 Del. quantity cm3/1000 strokes : 70.0
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +-: 0.02 Check tolerance cm3/1000s. +-: 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 45.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 270 Del. quantity cm3/1000 strokes : 70.0 Tolerance
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +-: 0.02 Check tolerance cm3/1000s. +-: 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 45.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 270 Del. quantity cm3/1000 strokes : 70.0
Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 1.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 1.5 Tolerance	Del. quantity cm3/1000 strokes : 0.80 Tolerance cm3/1000 str. +-: 0.02 Check tolerance cm3/1000s. +-: 0.10  START TRANSITION  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 45.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 270 Del. quantity cm3/1000 strokes : 70.0 Tolerance

Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 5,4
Tolerance mm + : +0,2
Dimension MS mm : 1,2
Tolerance mm + : +0,2
KSB travel mm : 4,3
TLA travel mm : 6,5

POTENTIOMETER

SET

1. measurement

voltage Volt : 5,0

1. measurement

voltage Volt : 0,8

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 35,1..39,1

Control lever

position YB mm : 56,9..68,1

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.02.96 Test oil : ISO 4113

Part no. : 0 460 494 355 Pump designation : VE4/9F2150R577-1

Customer-spec. information

Customer : NISSAN-MISA

Motor : GX-3

Power KW: 53.0

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x Length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1200

Setting mm : 3.2
Tolerance mm + : 0.2
Shutoff solenoid

Volt : 12

## SUPPLY PUMP PRESSURÉ

Rated speed rpm : 1200

Supply pomp

pressure bar : 5.9
Tolerance bar + : 0.3
Shutoff solenoid

Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 2150

Del. quantity

cm3/1000 strokes : 44.5

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

## IDLE SETTING

Rated speed rpm : 375
Del. quantity

cm3/1000 strokes : 8.5

Tolerance

cm3/1000 str. + : 2.0

Shutoff solenoid

Volt : 12

Spread

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s. : 3.0

#### FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500

Del. quantity

cm3/1000 strokes : 15.0

Tolerance

cm3/1000 str. + : 3.0

Shutoff solenoid

Volt : 12

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity	Shutoff solenoid
cm3/1000 strokes : 60.0	Volt : 12
Tolerance	
cm3/1000 str. +: 15.0	Rated speed rpm : 600
Shutoff solenoid	Overflow quantity
Volt : 12	ccm/10s : 63.8
†	Tolerance
†	ccm/10s + : 22.2
	Charle that answer
	Check tolerance ccm/10s +-: 22.2
INJECTION-PUMP TEST SPECIFICATIONS I	ccm/1Us +-: 22.2 Shutoff solenoid
Time Control of the feet of Control of Contr	Volt : 12
TIMING DEVICE CHARACTERISTIC	• • • • • • • • • • • • • • • • • • • •
	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 2150	PECTUCINI THE DICARAGA CHARACTERIOTEC
1	Rated speed rpm : 2500
SV travel mm : 9.2	Del. quantity
Tolerance mm + : 0.4	cm3/1000 strokes : 15.0
Check	Tolerance
tolerance mm + : 0.7	cm3/1000 str. + : 3.0
Shutoff solenoid +	Check tolerance
Volt : 12 +	cm3/1000s. + : 4.5
t	Shutoff solenoid
Rated speed rpm : 900 +	Volt : 12
†	
SV travel mm : 1.2	Rated speed rpm : 2350
Tolerance mm +: 0.4	Del. quantity
Check	cm3/1000 strokes : 33.3
tolerance mm +: 0.7	Tolerance
Shutoff solenoid	cm3/1000 str. +-: 4.0
Volt : 12	Check tolerance
SUPPLY PUMP PRESSURE CHARACTERISTIC	cm3/1000s. +-: 5.5 Shutoff solenoid
T	
Rated speed rpm : 2150	Volt : 12
Supply pomp	Rated speed rpm : 2700
pressure bar : 8.7	Del. quantity
Tolerance bar +: 0.3	cm3/1000 strokes : 2.5
Shutoff solenoid	Tolerance
Volt : 12	cm3/1000 str. + : 2.5
<u> </u>	Check tolerance
Rated speed rpm : 900	cm3/1000s. +-: 2.5
Supply comp	Shutoff solenoid
pressure bar : 5.0	Volt : 12
Tolerance bar +-: 0.3	
Shutoff solenoid +	Rated speed rpm : 900
Volt : 12 +	Del. quantity
+	cm3/1000 strokes : 42.2
OVERFLOW QUANTITY +	Tolerance
Dated aread pro 4 2450	cm3/1000 str. + : 1.5
Rated speed rpm : 2150	Check tolerance
Overflow quantity ccm/10s : 97.2	cm3/1000s. +-: 2.5 Shutoff solenoid
Tolerance	Volt : 12
ccm/10s +-: 41.6	vott : 12
I	Rated speed rpm : 1200
Check tolerance	Del. quantity
ccm/10s +: 41.6	cm3/1000 strokes : 43.2

Tolerance	Spread
cm3/1000 str. +-: 1.5	- cm3/1000 strokes : 5.0
Check tolerance	Check tolerance
cm3/1000s. $\leftarrow$ : 2.5 Shutoff solenoid	cm3/1000s. +-: 1.5
Volt : 12	+ Spread + cm3/1000 strokes : 5.0
. 12	T CIIS/1000 Strokes : 5.0
Rated speed rpm : 1800	IDLE DELIVERY
Del. quantity	-
cm3/1000 strokes : 44.3	Rated speed rpm : 800
Tolerance	- Del. quantity
cm3/1000 str. +-: 1.5	+ cm3/1000 strokes : 2.5
Check tolerance cm3/1000s. +-: 2.5	Tolerance
cm $3/1000$ s. $\leftarrow$ : 2.5 Shutoff solenoid	cm3/1000 str. + : 2.5
Volt : 12	- Check tolerance - cm3/1000s. +-: 2.5
. 12	Shutoff solenoid
Rated speed rpm : 600	+ Volt : 12
Del. quantity	
cm3/1000 strokes : 41.0	Rated speed rpm : 500
Tolerance	+ Del. quantity
cm3/1000 str. + : 1.5	- cm3/1090 strokes : 1.5
Check tolerance cm3/1000s. + : 2.5	Tolerance
Shutoff solenoid	- cm3/1000 str. +-: 1.5 - Check tolerance
Volt : 12	cm3/1000s. +-: 1.5
	Shutoff solenoid
Rated speed rpm : 2150	Volt : 12
Del. quantity	+
cm3/1000 strokes : 44.5	+
Tolerance	†
cm3/1000 str. + : 0.5 Check tolerance	†
cm3/1000s. +-: 1.3	Ī
Shutoff solenoid	START TRANSITION
Volt : 12	-
	Rated speed rpm : 400
	Del. quantity
PLEATE CHUTAFF	cm3/1000 strokes : 45.0
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	+ Tolerance + cm3/1000 str. +-: 20.0
CONTROL LEVER, THE STOP	- cm3/1000 str. +-: 20.0 - Shutoff solenoid
Rated speed rpm : 375	+ Volt : 12
Del. quantity	
cm3/1000 strokes : 1.5	+
Tolerance	Rated speed rpm : 270
cm3/1000 str. +: 1.5	Del. quantity
Check tolerance cm3/1000s. +: 1.5	cm3/1000 strokes : 70.0
Spread	+ Tolerance + cm3/1000 str. +-: 20.0
cm3/1000 strokes : 5.0	Shutoff solenoid
-	Volt : 12
FULL-LOAD STOP CONTROL LEVER	+
Rated speed rpm : 375	ASSEMBLY AND ADJUSTMENT DIMENSIONS
Del. quantity - cm3/1000 strokes : 1.5	Dimension K 7.7
cm3/1000 strokes : 1.5 - Tolerance -	Dimension K mm : 3,3 Tolerance mm +-: +-0,1
cm3/1000 str. +-: 1.5	Dimension KF mm : 5,4
	Tolerance mm +-: +-0,2
	, , , , , , , , , , , , , , , , , , , ,

Dimension MS mm : 1,2
Tolerance mm + : +-0,2
KSB travel mm : 4,3
TLA travel mm : 6,5

CONTROL LEVER POSITION SET

Control lever

position YA mm : 35,1..39,1

Control lever

position YB mm : 56,9..68,1

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.02.95 Test oil : ISO 4113

Part no. : 0 460 494 385 Pump designation: VE4/9F2150R281-2

Customer-spec. information Customer : PSA

Motor : XUD11ATE-Y BVA

Power KW 78.0

#### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature \*C Tolerance \*C +:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar +-:

: 1 680 750 073 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm 1250 Aneroid pressure

hPa 1000

Setting mm 2.9 Tolerance mm +-: 0.1

Shutoff solenoid

Volt 12

## SUPPLY PUMP PRESSURE

Rated speed rpm 1250

Aneroid pressure

hPa 1000

Supply pomp

pressure bar 5.3 Tolerance bar +-: 0.3

Shutoff solenoid

Volt 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250

Aneroid pressure

hPa 1000

Del. quantity

cm3/1000 strokes : 61.5

Tolerance

cm3/1000 str.  $\leftarrow$ : 0.5 Spread

cm3/1000 strokes : 2.5 Check tolerance

cm3/1000s. 2.5

Shutoff solenoid

Volt 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 42.5

Tolerance

cm3/1000 str. +-:0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid Volt 12

Check tolerance

cm3/1000s. 2.5

Check tolerance

cm3/1000s. 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 550 :

Del. quantity		+
cm3/1000 strokes	: 3.0	4
Tolerance		+
cm3/1000 str. +-	: 0.5	+
Shutoff solenoid		+ INJECTION-PUMP TEST SPECIFICATIONS
Volt	: 12	+
***		† TIMING DEVICE CHARACTERISTIC
IDLE DELIVERY		+
0-4-1	325	+ Rated speed rpm : 2000
Rated speed rpm	: 325	+ Aneroid pressure
Del. quantity cm3/1000 strokes	. 17.0	+ hPa : 1000
Tolerance	: 13.0	T ou though the
cm3/1000 str. +-	: 1.0	+ SV travel mm : 6.9
Spread	1.0	+ Tolerance mm +-: 0.3 + Check
cm3/1000 strokes	: 2.0	
Shutoff solenoid	. 2.0	+ tolerance mm +-: 0.7 + Shutoff solenoid
Volt	: 12	1
	. 12	† Volt : 12
HIGH IDLE SETTING		Rated speed rpm : 1000
TAPP APILITIA		Aneroid pressure
Rated speed rpm	: 450	+ hPa : 1000
Del. quantity		1 111 2
cm3/1000 strokes	: 12.0	+ SV travel mm : 1.6
Tolerance		+ Tolerance mm +-: 0.3
cm3/1000 str. +-	: 1.0	Check .
Shutoff solenoid		tolerance m/n +: 0.7
Volt	: 12	+ Shutoff solenoid
· = • •		+ Volt : 12
FULL-LOAD SPEED RE	EGULATION	1
	<del>-</del> · · · - · · ·	+ SUPPLY PUMP PRESSURE CHARACTERISTI
Rated speed rpm	: 2250	The state of the s
Pressure hPa	: 1000	Rated speed rpm : 2000
Del. quantity		Aneroid pressure
cm3/1000 strokes	: 52.0	+ hPa : 1000
Tolerance		+ Supply pomp
cm3/1000 str. +-	: 3.0	+ pressure bar : 7.4
Shutoff solenoid		Tolerance bar + : 0.3
Volt	: 12	+ Shutoff solenoid
		+ Volt : 12
STARTING FUEL DEL:	IVERY	+
	400	+ Rated speed rpm : 1000
Rated speed rpm	: 100	+ Aneroid pressure
Del. quantity	7.	+ hPa : 1000
cm3/1000 strokes	: 75.0	+ Supply pomp
Tolerance		pressure bar : 4.6
cm3/1000 str. +-	: 5.0	Tolerance bar + : 0.3
Shutoff solenoid	. 42	+ Shutoff solenoid
Volt	: 12	+ Volt : 12
CET COANHATEN OTAL	DITING DELIVERY	OVEREI OIL OLIANITETTY
SET GRADUATED STAF		+ OVERFLOW QUANTITY
CONTROL LEVED TO	LE SIUF	I Pated speed now a 2000
CONTROL LEVER, IDL		+ Rated speed rpm : 2000 + Overflow quantity
	• 200	T UVERTION QUARTITY
Rated speed rpm	: 200	
Rated speed rpm Del. quantity		+ ccm/10s : 97.2
Rated speed rpm Del. quantity cm3/1000 strokes		+ ccm/10s : 97.2 + Tolerance
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 77.0	+ ccm/10s : 97.2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 77.0 : 1.0	ccm/10s : 97.2 + Tolerance + ccm/10s +-: 41.6
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 77.0 : 1.0	+ ccm/10s : 97.2 + Tolerance

Shutoff solenoid Volt	:	12		‡	Shutoff solenoid Volt	:	12
Rated speed rpm Overflow quantity		500		Ŧ	Rated speed rpm	:	2000
ccm/10s Tolerance	:	62.5		Ŧ	Aneroid pressure hPa	:	1000
140	:	20.8		Ŧ	Del. quantity cm3/1000 strokes Tolerance	:	57.5
Check tolerance ccm/10s +-		20.8		Ţ	cm3/1000 str. +- Check tolerance	:	1.5
Shutoff solenoid	•	12		I	cm3/1000s. +- Shutoff solenoid	:	2.3
DELIVERY AND BREAK	(AWA		TERTSTIC	Ī	Volt	:	12
Rated speed rpm	:	2250	CUTOLIC	Ī	Rated speed rpm Aneroid pressure	:	500
Aneroid pressure	:	1000		1	hPa Del. quantity	:	1000
Del. quantity cm3/1000 strokes	:	52.0		1	cm3/1000 strokes Shutoff solenoid	:	17.5
Tolerance cm3/1000 str. +-		3.0		+	Volt	:	12
Check tolerance cm3/1000s. +-	:	4.0		1	Rated speed rpm Aneroid pressure	:	1000
Shutoff solenoid Volt	:	12		+	hPa Del. quantity	:	1000
Rated speed rpm	:	2400		‡	cm3/1000 strokes Tolerance	:	62.0
Aneroid pressure hPa	:	1000		+	cm3/1000 str. +- Check tolerance	:	1.5
Del. quantity cm3/1000 strokes	:	37.0		‡	cm3/1000s. +- Shutoff solenoid	:	2.5
Check tolerance cm3/1000s. +-	:	4.0		‡	Volt	:	12
Shutoff solenoid Volt	:	12		‡	Rated speed rpm Aneroid pressure	:	500
Rated speed rpm	:	2700		‡	hPa Del. quantity	:	1000
Aneroid pressure hPa	:	1000		‡	cm3/1000 strokes Tolerance		60.5
Del. quantity cm3/1000 strokes	:	3.0		‡	cm3/1000 str. +- Check tolerance	:	1.5
Tolerance cm3/1000 str. +-	:	3.0		‡	cm3/1000s. +- Shutoff solenoid	•	2.5
Check tolerance cm3/1000s. +-	:	4.0		‡	Volt	•	12
Shutoff solenoid Volt	:	12		‡	Rated speed rpm Aneroid pressure	:	1250
	:	750		‡	hPa Del. quantity	:	1000
Aneroid pressure hPa	:	400		Ŧ	cm3/1000 strokes Tolerance		61.5
Del. quantity cm3/1000 strokes Tolerance	:	56.5		7	cm3/1000 str. +- Check tolerance		0.5
cm3/1000 str. +- Check tolerance	:	0.5		Ŧ	cm3/1000s. +- Shutoff solenoid		2.3
cm3/1000s. +-	:	3.0		Ŧ	Volt	•	12

Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 str. +-: 0.5 Check tolerance			
Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 325 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000str. + : 1.5  Tolerance cm3/1000strokes : 8.0 Tolerance cm3/1000str. + : 3.0 Check tolerance cm3/1000str. + : 3.0 Check tolerance cm3/1000str. + : 3.0 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 str. + : 0.5 Check tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s + : 3.0 Shutoff solenoid Shutoff solenoid	MECHANICAL SHUTOF	F	
hPa : 1000  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000str. + : 1.5  Check tolerance cm3/1000s. + : 1.5  Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 325  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. + : 1.5  Check tolerance cm3/1000s. + : 1.5  IDLE DELIVERY  Rated speed rpm : 375  Del. quantity cm3/1000s. + : 3.0  Check tolerance cm3/1000s. + : 3.0  Check tolerance cm3/1000s. + : 3.0  Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500  Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 25.0  Tolerance cm3/1000s. + : 0.5  Check tolerance cm3/1000s. + : 0.5  Check tolerance cm3/1000s. + : 0.5  Check tolerance cm3/1000s. + : 0.5  Check tolerance cm3/1000s. + : 0.5  Check tolerance cm3/1000s. + : 0.5  Check tolerance cm3/1000s. + : 0.5  Shutoff solenoid		;	2000
cm3/1000 strokes : 1.5         Tolerance cm3/1000 str. + : 1.5         Check tolerance cm3/1000s. + : 1.5         Shutoff solenoid Volt : 12         ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP         Rated speed rpm : 325         Del. quantity cm3/1000 strokes : 1.5         Tolerance cm3/1000 str. + : 1.5         Check tolerance cm3/1000s. + : 1.5         IDLE DELIVERY         Rated speed rpm : 375         Del. quantity cm3/1000 str. + : 3.0         Check tolerance cm3/1000s. + : 3.0         Shutoff solenoid Volt : 12         EXHAUST-GAS RECIRCULATION         Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0         Tolerance cm3/1000 strokes : 25.0         Tolerance cm3/1000 strokes : 25.0         Tolerance cm3/1000 strokes : 25.0         Tolerance cm3/1000 strokes : 25.0         Tolerance cm3/1000 strokes : 25.0         Tolerance cm3/1000 strokes : 3.0         Shutoff solenoid	hPa	:	1000
cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 325 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000 str. + : 3.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000 str. + : 3.0 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 3.0 Shutoff solenoid	cm3/1000 strokes	:	1.5
cm3/1000s. +: 1.5 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 325 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5  IDLE DELIVERY  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 3.0 Shutoff solenoid	cm3/1000 str. +-	:	1.5
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 325 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5  IDLE DELIVERY  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Check tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid	cm3/1000s. +-	:	1.5
CONTROL LEVER, IDLE STOP  Rated speed rpm : 325 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5  IDLE DELIVERY  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid		*	12
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5  IDLE DELIVERY  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : 25.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid		LE S	TOP
cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000S. +: 1.5  IDLE DELIVERY  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 8.0 Tolerance cm3/1000 str. +: 3.0 Check tolerance cm3/1000S. +: 3.0 Shutoff solenoid Volt: 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm: 1500 Aneroid pressure hPa: 1000 Del. quantity cm3/1000 strokes: 25.0 Tolerance cm3/1000 strokes: 25.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000S. +: 3.0 Shutoff solenoid		:	325
cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5  IDLE DELIVERY  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid	cm3/1000 strokes	:	1.5
IDLE DELIVERY  Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid	cm3/1000 str. $+$	:	1.5
Rated speed rpm : 375  Del. quantity cm3/1000 strokes : 8.0  Tolerance cm3/1000 str. + : 3.0  Check tolerance cm3/1000s. + : 3.0  Shutoff solenoid  Volt : 12   EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 25.0  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 3.0  Shutoff solenoid		:	1.5
Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid	IDLE DELIVERY		
cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid		:	375
cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid	cm3/1000 strokes	:	8.0
cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid	cm3/1000 str. +-	:	3.0
EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid	cm3/1000s. +-	:	3.0
Rated speed rpm : 1500 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid	Volt	:	12
Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 25.0  Tolerance cm3/1000 str. + : 0.5  Check tolerance cm3/1000s. + : 3.0  Shutoff solenoid	EXHAUST-GAS RECIR	CULA	TION
hPa : 1000  Del. quantity  cm3/1000 strokes : 25.0  Tolerance  cm3/1000 str. + : 0.5  Check tolerance  cm3/1000s. + : 3.0  Shutoff solenoid	Rated speed rpm	:	1500
<pre>cm3/1000 strokes : 25.0 Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 3.0 Shutoff solenoid</pre>	hPa	:	1000
cm3/1000 str. + : 0.5 Check tolerance cm3/1000S. + : 3.0 Shutoff solenoid	cm3/1000 strokes	:	25.0
cm3/1000S. +: 3.0 Shutoff solenoid	cm3/1000 str. +	:	0.5
	cm3/1000s. +-	:	3.0
			42

Rated speed rpm	:	500
Aneroid pressure		
hPa	:	1000
Del. quantity	-	
cm3/1000 strokes	•	17.5
Tolerance	•	11.5
cm3/1000 str. +-		0.5
	:	0.5
Check tolerance		
cm3/1000s. +-	:	3.0
Shutoff solenoid		
Volt	:	12
START TRANSITION		
Rated speed rpm	:	325
Del. quantity		
cm3/1000 strokes	:	40.5
Tolerance		
cm3/1000 str. +-	:	3.5
Shutoff solenoid	_	• • • • • • • • • • • • • • • • • • • •
Volt	•	12
****	•	12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +-0,1
Dimension KF mm : 5,4
Tolerance mm + : +-0,2
Dimension MS mm : 1,4
Tolerance mm + : +-0,2

## POTENTIOMETER

SET

1. measurement voltage Volt : 5,0

1. measurement

voltage Volt : ARF1=2,9 V

2. measurement

voltage Volt : ARF2=1,9 V

**MICROSWITCH** 

SET

: ARF 12,0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.07.94 Test oil : ISO 4113

Part no. : 0 460 484 054 Pump designation: VE4/8F2300R425-1

Customer-spec. information

Customer : PSA

Motor : XUD9AL Peug. D70

#### TEST BENCH REQUIREMENTS

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

bar Tolerance bar +-: 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x Length mm : 450

#### REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 0.3 Tolerance mm + : + 0.02

Outlet : A

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Settina mm 3.7 Tolerance mm +-: 0.2 Shutoff solenoid

Volt 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250 Supply pomp

pressure bar 6.0 Tolerance bar +-: 0.3 Shutoff solenoid

Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

0.5

Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 30.2

Tolerance

cm3/1000 str. +-: Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Valt 12

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm :

Del. quantity

cm3/1000 strokes : 3.0

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid

Volt 12

# IDLE DELIVERY

Rated speed rpm : 375

Del. quantity

cm3/1000 strokes : 10.5 Tolerance

cm3/1000 str. +-: 1.0 Spread

cm3/1000 strokes :

2.0 Shutoff solenoid 12 Volt

HIGH IDLE SETTING

Rated speed rpm : 475	+ Shutoff solenoid
Del. quantity	+ Volt : 12
cm3/1000 strokes : 9.5	1
Tolerance	
cm3/1000 str. +-: 1.0	INJECTION-PUMP TEST SPECIFICATIONS
Shutoff solenoid	1100011017 1011 1201 01 Ed1. 107/1910
Volt : 12	TIMING DEVICE CHARACTERISTIC
. 12	T ITHING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	T Dated around man 2000
LOFF-FOND SLEED KERRITON	+ Rated speed rpm : 2000
Detail and June 2050	†
Rated speed rpm : 2650	+ SV travel mm : 7.1
Del. quantity	+ Tolerance mm + : 0.4
cm3/1000 strokes : 11.0	+ Check
Tolerance	tolerance mm + : 0.7
cm3/1000 str. + : 2.0	+ Shutoff solenoid
Shutoff salenoid	+ Volt : 12
Volt : 12	1
	Rated speed rpm : 800
STARTING FUEL DELIVERY	1 Materia opera i piii
	SV travel mm : 1.6
Rated speed rpm : 100	Tolerance mm + : 0.4
Del. quantity	
	Check
cm3/1000 strokes : 55.0	tolerance mm +: 0.7
Tolerance	+ Shutoff solenoid
cm3/1000 str. +-: 13.0	† Volt : 12
Shutoff solenoid	+
Volt : 12	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
	+
	+ Rated speed rpm : 2200
	+ Supply pomp
LOAD-DEPENDENT START OF DELIVERY	+ pressure bar : 8.5
SETTING	+ Tolerance bar +: 0.3
	+ Shutoff solenoid
DELIVERY DIFFERENCE	
DECIACUL DILLENGIACE	† Volt : 12
Rated speed rpm : 1250	Rated speed rpm : 500
Del. quantity	+ Supply pomp
cm3/1000 strokes : -6.0	pressure bar : 3.6
Tolerance	† Tolerance bar +: 0.3
cm3/1000 str. +-: 1.0	† Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	+
	+ OVERFLOW QUANTITY
PRESSURE DIFFERENCE	+
	+ Rated speed rpm : 2200
Rated speed rpm : 1250	+ Overflow quantity
Del. quantity	+ ccm/10s : 97.2
cm3/1000 strokes : -0.2	+ Tolerance
Tolerance	+ ccm/10s + : 41.6
cm3/1000 str. + : 0.1	
Shutoff solenoid	Check tolerance
Volt : 12	+ ccm/10s + : 55.5
1 15	Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE	+ Volt : 12
I THITING - DEATOR I WHARF DILLEVELACE	T VOLL : 12
Cottod amond 1250	T 001-d 2-2-d 500
Rated speed rpm : 1250	+ Rated speed rpm : 500
Del. quantity	+ Overflow quantity
cm3/1000 strokes : -1.0	+ ccm/10s : 63.8
Tolerance	+ Tolerance
cm3/1000 str. +-: 0.1	+ ccm/10s +-: 22.2

	+ Del. quantity
Check tolerance	+ cm3/1000 strokes : 30.2
ccm/10s + : 34.7	† Tolerance
Shutoff solenoid	+ cm3/1000 str. +-: 0.5
Volt : 12	Check tolerance
	+ cm3/1000s. +-: 2.2
DELIVERY AND BREAKAWAY CHARACT	
	+ Volt : 12
Rated speed rpm : 2650	+
Del. quantity	†
cm3/1000 strokes : 11.0	
Tolerance	+ ELECTR. SHUTOFF
cm3/1000 str. +: 2.0	CONTROL LEVER, IDLE STOP
Check tolerance	
cm3/1000s. + : 4.0	+ Rated speed rpm : 375
Shutoff solenoid Volt : 12	Del. quantity
vott : 12	+ cm3/1000 strokes : 1.5
Rated speed rpm : 2500	Tolerance
Rated speed rpm : 2500 Del. quantity	+ cm3/1000 str. +-: 1.5 + Check tolerance
cm3/1000 strokes : 22.5	+ cm3/1000s. + : 1.5
Tolerance	
cm3/1000 str. +-: 3.0	
Check tolerance	
cm3/1000s. + : 5.0	1
Shutoff solenoid	1
Volt : 12	<del> </del>
Rated speed rpm : 2900	+ CHECKING LOAD-DEPENDENT
Del. quantity	+ START OF DELIVERY
cm3/1000 strokes : 3.0	+
Tolerance	- DELIVERY DIFFERENCE
cm3/1000 str. + : 3.0	+
Check tolerance	+ Rated speed rpm : 1250
cm3/1000s. +: 3.0	+ Del. quantity
Shutoff solenoid	+ cm3/1000 strokes : -8.5
Volt : 12	- Tolerance
noted and all and a 2000	+ cm3/1000 str. +: 5.0
Rated speed rpm : 2200	+ Check tolerance
Del. quantity	+ cm3/1000s. + : 5.0
cm3/1000 strokes : 33.0 Tolerance	+ Shutoff solenoid
cm3/1000 str. ÷ : 1.0	+ Volt : 12
	<u> </u>
Check tolerance	TIMING-DEVICE TRAVEL DIFFERENCE
Check tolerance	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000s. +: 2.2	+
cm3/1000s. +: 2.2 Shutoff solenoid	Rated speed rpm : 1250
cm3/1000s. +: 2.2	Rated speed rpm : 1250 Del. quantity
cm3/1000s. +: 2.2 Shutoff solenoid	Rated speed rpm : 1250
cm3/1000s. +: 2.2 Shutoff solenoid Volt : 12	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -1.0
<pre>cm3/1000s. + : 2.2 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 31.3</pre>	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : -1.0  Tolerance  cm3/1000 str. +- : 0.1  Check tolerance
<pre>cm3/1000s. + : 2.2 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 31.3 Tolerance</pre>	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : -1.0  Tolerance  cm3/1000 str. +- : 0.1  Check tolerance  cm3/1000s. +- : 0.1
<pre>cm3/1000s. + : 2.2 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 31.3 Tolerance cm3/1000 str. + : 1.5</pre>	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : -1.0  Tolerance  cm3/1000 str. +- : 0.1  Check tolerance  cm3/1000s. +- : 0.1  Shutoff solenoid
<pre>cm3/1000s. + : 2.2 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 31.3 Tolerance cm3/1000 str. + : 1.5 Check tolerance</pre>	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : -1.0  Tolerance  cm3/1000 str. +- : 0.1  Check tolerance  cm3/1000s. +- : 0.1
<pre>cm3/1000s. + : 2.2 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 31.3 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 3.0</pre>	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : -1.0  Tolerance  cm3/1000 str. +- : 0.1  Check tolerance  cm3/1000s. +- : 0.1  Shutoff solenoid  Volt : 12
<pre>cm3/1000s. + : 2.2 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 31.3 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid</pre>	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : -1.0  Tolerance  cm3/1000 str. +- : 0.1  Check tolerance  cm3/1000s. +- : 0.1  Shutoff solenoid
<pre>cm3/1000s. + : 2.2 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 31.3 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 3.0</pre>	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : -1.0  Tolerance cm3/1000 str. +- : 0.1 Check tolerance cm3/1000s. +- : 0.1 Shutoff solenoid Volt : 12  DELIVERY DIFFERENCE
cm3/1000s. +: 2.2 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 31.3 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : -1.0  Tolerance cm3/1000 str. +- : 0.1 Check tolerance cm3/1000s. +- : 0.1 Shutoff solenoid Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1250
<pre>cm3/1000s. + : 2.2 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 31.3 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid</pre>	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : -1.0  Tolerance cm3/1000 str. +- : 0.1 Check tolerance cm3/1000s. +- : 0.1 Shutoff solenoid Volt : 12  DELIVERY DIFFERENCE

Tolerance cm3/1000 str. +-:3.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid Volt 12 PRESSURE DIFFERENCE Rated speed rpm : 1250 Supply pomp pressure bar -1.5Tolerance bar +-: 0.3 Shutoff solenoid 12 Volt TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 0.5 Tolerance mm +-: Check tolerance mm 0.6 Shutoff solenoid 12 Volt START TRANSITION Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 30.0 Tolerarice cm3/1000 str. + :10.0 Shutoff solenoid Volt 12 Rated speed rpm : 225 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. + :17.0 Shutoff solenoid 12 Volt ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : 3,7 Tolerance mm + : + 0,1 Dimension KF mm : 6,0 Tolerance mm + : +-0,2 Dimension MS mm : 1,4 Tolerance mm + : + 0.2

Control lever position YA mm : 18,8..22,8

Control lever

position YB mm : 78,4..90,6

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.95 Test oil : ISO 4113

Part no. : 0 460 484 098 Pump designation : VE4/8F2300R425-11

Customer—spec. information Customer : PSA Motor : XUD9 A/L Power KW : 51.0

## TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature \*C : 45
Tolerance \*C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +- : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

## BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm +- : +-0,02
Outlet : A

## INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Supply pomp
pressure bar : 6.0
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 30.2
Tolerance
cm3/1000 str. + : 0.5
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 str. +-: 0.5
Shutoff solenoid
Volt : 12

#### IDLE DELIVERY

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 13.0
Tolerance
cm3/1000 str. +- : 1.0
Spread
cm3/1000 strokes : 2.0

Shutoff solenoid Volt : 12	+ Rated speed rpm : 1250 + Del. quantity
HIGH IDLE SETTING	+ cm3/1000 strokes : -1.0 + Tolerance
Rated speed rpm : 475	+ cm3/1000 str. → : 0.1 + Shutoff solenoid
Del. quantity	Volt : 12
cm3/1 <b>000</b> strokes : 9.5 Tolerance	ļ
cm3/100G str. ← : 1.0 Shutoff solenoid	+ INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Rated speed rpm : 2000
Rated speed rpm : 2650	+ SV travel mm : 7.1
Del. quantity	† Tolerance mm + : 0.4
cm3/1000 strokes : 11.0 Tolerance	+ Check
cm3/1000 str. + : 2.0	tolerance mm + : 0.7 Shutoff solenoid
Shutoff solenoid	† Volt : 12
Volt : 12	+ Rated speed rpm : 800
STARTING FUEL DELIVERY	T Nated speed (pin): 000
	+ SV travel mm : 1.6
Rated speed rpm : 100	† Tolerance mr. ÷ : 0.4
Del. quantity cm3/1000 strokes : 55.0	+ Check + tolerance mm +-: 0.7
Tolerance	tolerance mm + : 0.7 Shutoff solenoid
cm3/1000 str. + : 13.0	+ Volt : 12
Shutoff solenoid	+
Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
	+ Rated speed rpm : 2200 + Supply pomp
LOAD-DEPENDENT START OF DELIVERY	+ pressure bar : 8.5
SETTING	+ Tolerance bar → : 0.3 + Shutoff solenoid
DELIVERY DIFFERENCE	+ Volt : 12
	+
Rated speed rpm : 1250 Del. quantity	+ Rated speed rpm : 500 + Supply pomp
cm3/1000 strokes : -6.0	+ pressure bar : 3.6
Tolerance	Tolerance bar +-: 0.3
cm3/1000 str. +-: 1.0 Shutoff solenoid	+ Shutoff solenoid + Volt : 12
Volt : 12	T vott : 12
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
THEODORE DITTERENCE	Rated speed rpm : 2200
Rated speed rpm : 1250	+ Overflow quantity
Del. quantity	+ ccm/10s : 97.2
cm3/1000 strokes : -0.2 Tolerance	+ Tolerance + ccm/10s +-: 41.6
cm3/1000 str. + : 0.1	+ 4(.0
Shutoff solenoid	Check_tolerance
Volt : 12	+ ccm/10s + : 55.5
TIMING-DEVICE TRAVEL DIFFERENCE	+ Shutoff solenoid + Volt : 12
ITHING-DEVICE INVALE DIFFERENCE	T voci : 12
	T

T	
Rated speed rpm : 2650	
Del. quantity  cm3/1000 strokes: 11.0	*
cm3/1000 str. +: 2.0	
Check tolerance Rated speed rpm : 400 cm3/1000s. + : 4.0 Del. quantity	
Shutoff solenoid + cm3/1000 strokes : 1.5  Volt : 12 + Tolerance	
Rated speed rpm : 2500 + cm3/1000 str. + : 1.5	
Del. quantity + cm3/1000s. +-: 1.5 cm3/1000s +-: 1.5	
Tolerance FULL-LOAD STOP CONTROL LEVER cm3/1000 str. +: 3.0	
Check tolerance + Rated speed rpm : 400	
cm3/1000S. +: 5.0 + Del. quantity Shutoff solenoid + cm3/1000 strokes : 1.5	
Volt : 12 + Tolerance	
+ cm3/1000 str. + : 1.5  Rated speed rpm : 2900 + Check tolerance  Del. quantity + cm3/1000s. + : 1.5	
Del. quantity + cm3/1000s. +: 1.5 cm3/1000 strokes: 3.0 + Tolerance	
cm3/1000 str. +: 3.0	
cm3/1000s. +-: 3.0 Shutoff solenoid	
Volt : 12 - CHECKING LOAD-DEPENDENT START OF DELIVERY	
Rated speed rpm : 2200 + DELIVERY DIFFERENCE	
cm3/1000 strokes : 33.0 + Rated speed rpm : 1250	
cm3/1000 str. +-: 1.0 + Del. quantity Check tolerance + cm3/1000 strokes : -8.5	
cm3/1000s. +-: 2.2 + Tolerance	
Shutoff solenoid + cm3/1000 str. +: 5.0  Volt : 12 + Check tolerance	
+  cm3/1000s. + : 5.0	
Rated speed rpm : 500 + Shutoff solenoid	
Del. quantity + Volt : 12	
	<b>:</b>

Del. quantity cm3/1000 strokes Tolerance cm3/1009 str. + Check tolerance	•	-1.0 0.1	
cm3/1000s. +- Shutoff solenoid	•	0.1	
Volt	:	1.2	
DELIVERY DIFFEREN			
Rated speed rpm Del. quantity		1250	
cm3/1000 strokes Tolerance		5.0	
cm3/1000 str. +- Check tolerance	:	3.0	
cm3/1000s. +- Shutoff solenoid	:	3.0	
Volt	:	12	
PRESSURE DIFFEREN	CE		
Rated speed rpm Supply pomp	:	1250	
pressure bar Tolerance bar +-	:	1.5 0.3	
Shutoff solenoid Volt	:	12	
• • • • • • • • • • • • • • • • • • • •	•	· <del>-</del>	
TIMING-DEVICE TRA	VEL	DIFFERENCE	
TIMING-DEVICE TRA			
Rated speed rpm Tolerance mm +-	:	DIFFERENCE 1250 0.5	
Rated speed rpm Tolerance mm +- Check tolerance mm +-	:	1250	
Rated speed rpm Tolerance mm +- Check	:	1250 0.5	
Rated speed rpm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt	•	1250 0.5 0.6 12	
Rated speed rpm Tolerance mm +- Check tolerance mm +- Shutoff solenoid	•	1250 0.5 0.6 12	
Rated speed rpm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm	: :	1250 0.5 0.6 12	
Rated speed rpm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Tolerance cm3/1000 str. +-	: :	1250 0.5 0.6 12	
Rated speed rpm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: :	1250 0.5 0.6 12 TION	
Rated speed rpm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Tolerance cm3/1000 str. +- Check tolerance	: : : CULA	1250 0.5 0.6 12 TION 1000	
Rated speed rpm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: : : : CULA	1250 0.5 0.6 12 TION 1000 1.0 4.0	
Rated speed rpm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  START TRANSITION Rated speed rpm	: : : : CULA	1250 0.5 0.6 12 TION 1000 1.0 4.0	
Rated speed rpm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes	CULA	1250 0.5 0.6 12 TION 1000 1.0 4.0	
Rated speed rpm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  START TRANSITION Rated speed rpm Del. quantity	: : : : :	1250 0.5 0.6 12 TION 1000 1.0 4.0 12	

Rated speed rpm : 225
Del. quantity
cm3/1000 strokes : 54.0
Tolerance
cm3/1000 str. +-: 17.0
Shutoff solenoid
Volt : 12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm + : +0,1
Dimension KF mm : 6,0
Tolerance mm + : +0,2
Dimension MS mm : 1,4
Tolerance mm + : +-0,2

BOSCH INJ. PUMP TE	EST SPECIFICATIONS
Note remarks	
Refer to Service I adjustment instruc See microcard(s) W	ctions.
Edition Test oil	: 10.11.95 : ISO 4113
Part no. Pump designation	: 0 460 484 109 : VE4/8F2300R425-13
Customer-spec. int Customer Motor Power KW	formation : PSA : XUD9 A L3 : 51.0
TEST BENCH REQUIRE	EMENTS
Calibrating—oil return temperature °C +-	: 45 : 1
Overflow restriction man	: 0.55
Inlet press. bar Tolerance bar +-	
Test nozzle holde assembly	: 1 688 901 022
Opening pressure bar Tolerance bar +-	: 130 : 3
Test lines	: 1 680 750 073
Outside diameter	: 6.00
x inside diameter x length mm	: 2.00 : 450

Plunger stroke mm Tolerance mm +- Outlet		-0,02
INJECTION PUMP SE	TTIN	NG VALUES
TIMING DEVICE TRA	VEL	
Rated speed rpm	:	1250
Setting mm Tolerance mm +- Shutoff solenoid	:	3.5 0.2
Volt	:	12
SUPPLY PUMP PRESSI	JRE	
Rated speed rpm Supply pomp	:	1250
pressure bar Tolerance bar +- Shutoff solenoid	:	6.0 0.3
Volt	:	12
FULL-LOAD DELIV.	<b>∀IT</b> ⊦	OUT BOOST PRESSURE
Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	30.2
Tolerance cm3/1000 str. +-	:	0.5
Spread cm3/1000 strokes	:	2.0
Shutoff solenoid Volt	:	12
HOUSING-FIXED IDLE RESIDUAL QUANTITY		
Rated speed rpm	:	500
Del. quantity cm3/1000 strokes	:	5.0
Tolerance cm3/1000 str. +-	:	0.5
Shutoff solenoid Volt	:	12
IDLE DELIVERY		
Rated speed rpm	:	400
Del. quantity cm3/1000 strokes	:	13.0
	:	1.0
Spread cm3/1000 strokes	:	2.0

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Shirtoff colonoid	ı
Shutoff solenoid Volt : 12	Rated speed rpm : 1250 Del. quantity
HIGH IDLE SETTING	cm3/1000 strokes : -1.0
Rated speed rpm : 475 Del. quantity	cm3/1000 str. +: 0.1 Shutoff solenoid
cm3/1000 strokes : 9.5 Tolerance	Volt : 12
cm3/1000 str. +-: 1.0 Shutoff solenoid	INJECTION—PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	+
Rated speed rpm : 2650	Rated speed rpm : 2030
Del. quantity cm3/1000 strokes : 11.0 Tolerance	+ SV travel mm : 7.6 - Tolerance mm +-: 0.4 - Check
cm3/1000 str. +: 2.0 Shutoff solenoid	tolerance mm + : 0.7 Shutoff solenoid
Volt : 12	Volt : 12
SET GRADUATED STARTING DELIVERY	Rated speed rpm : 800
CONTROL LEVER, IDLE STOP  Rated speed rpm : 100	SV travel mm : 0.8 Tolerance mm +-: 0.4
Rated speed rpm : 100 - Del. quantity - cm3/1000 strokes : 47.0 -	- Check - tolerance mm +-: 0.7 - Shutoff solenoid
Tolerance cm3/1000 str. + : 1.0	Volt : 12
Shutoff solenoid Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
, , ,	Rated speed rpm : 2200 Supply pomp
LOAD-DEPENDENT START OF DELIVERY	pressure bar : 8.5
SETTING	Tolerance bar +-: 0.3
00111110	Shutoff solenoid
DELIVERY DIFFERENCE	Volt : 12
Rated speed rpm : 1250 - Del. quantity -	Rated speed rpm : 500 Supply pomp
cm3/1000 strokes : -6.0	pressure bar : 3.6
Tolerance -	Tolerance bar +-: 0.3
cm3/1000 str. + : 1.0 - Shutoff solenoid -	Shutoff solenoid Volt : 12
Volt : 12 -	OVERFLOW QUANTITY
PRESSURE DIFFERENCE	-
Rated speed rpm : 1250	Rated speed rpm : 2200 Overflow quantity
Del. quantity - cm3/1000 strokes : -0.2 -	ccm/10s : 97.2 Tolerance
Tolerance - cm3/1000 str. +-: 0.1 -	ccm/10s +-: 41.6
Shutoff solenoid - Volt : 12 -	Check tolerance ccm/10s +: 55.5
TIMING-DEVICE TRAVEL DIFFERENCE	Shutoff solenoid Volt : 12

	+ Check tolerance
Rated speed rpm : 500	+ cm3/1000s. +-: 3.0
Overflow quantity	+ Shutoff solenoid
cam/10s : 63.8	+ Volt : 12
Tolerance	1
ccm/10s + : 22.2	+ Rated speed rpm : 1250
	+ Del. quantity
Check tolerance	+ cm3/1000 strokes : 30.2
com/10s +: 34.7	+ Tolerance
Shutoff solenoid	+ cm3/1000 str. $+$ : 0.5
Volt : 12	+ Check tolerance
	+  cm3/1000s. + + : 2.2
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 2650	+
Del. quantity	
cm3/1000 strokes : 11.0	+ MECHANICAL SHUTOFF
Tolerance	+
cm3/1000 str. + : 2.0	+ Rated speed rpm : 2200
Check tolerance	+ Del. quantity
cm3/1000s. + : 4.0	+ cm3/1000 strokes : 1.5
Shutoff solenoid	+ Tolerance
Volt : 12	+ cm3/1000 str. +-: 1.5
	+ Check tolerance
Rated speed rpm : 2500	
Del. quantity	+ Shutoff solenoid
cm3/1000 strokes : 22.5	+ Volt : 12
Tolerance	+
cm3/1000 str. +-: 3.0	
Check tolerance	+ ELECTR. SHUTOFF
cm3/1000s. +: 5.0	+ CONTROL LEVER, IDLE STOP
Shutoff solenoid	†
Volt : 12	+ Rated speed rpm : 400
Dated around num a 2000	Del. quantity
Rated speed rpm : 2900 Dal. quantity	cm3/1000 strokes : 1.5
cm3/1000 strokes : 1.5	+ Tolerance + cm3/1000 str. +-: 1.5
Tolerance	Check tolerance
cm3/1000 str. + : 1.5	- cm3/1000s. +-: 1.5
Check tolerance	I clis/10003. 4-2. 1.5
cm3/1000s. +-: 1.5	I
Shutoff solenoid	1
Volt : 12	1
	+
Rated speed rpm : 2200	+
Del. quantity	
cm3/1000 strokes : 33.0	+ CHECKING LOAD-DEPENDENT
Tolerance	+ START OF DELIVERY
cm3/1000 str. + : 1.0	+
Check tolerance	+ DELIVERY DIFFERENCE
cm3/1000s. +-: 2.2	+
Shutoff solenoid	+ Rated speed rpm : 1250
Volt : 12	+ Del. quantity
D 4 d	+ cm3/1000 strokes : -7.0
Rated speed rpm : 500	+ Tolerance
Del. quantity	+ cm3/1000 str. +-: 3.0
cm3/1000 strokes : 31.3	Check tolerance
Tolerance cm3/1000 str. +-: 1.5	+ cm3/1000s. + : 3.0 + Shutoff solenoid
cm3/1000 str. +-: 1.5	+ Volt : 12
	T VOLL : 12

TIMING-DEVICE TRA	VEL	DIFFERENCE		
Rated speed rpm Del. quantity	:	1250		
cm3/1000 strokes Tolerance	•	-1.0		
cm3/1000 str. ←	:	0.1		
cm3/1000s. +- Shutoff solenoid	:	0.1		
Volt	:	12		
DELIVERY DIFFEREN	CE			
Rated speed rpm Del. quantity	:	1250		
cm3/1000 strokes Tolerance	:	5.0		
cm3/1000 str. +- Check tolerance	:	3.0		
cm3/1000s. +- Shutoff solenoid	:	3.0		
Volt	:	12		
PRESSURE DIFFEREN	CE			
Rated speed rpm Supply pomp	:	1250		
pressure bar Tolerance bar +-	:	-1.5 0.3		
Shutoff solenoid Volt	:	12		
TIMING-DEVICE TRA	VEL	DIFFERENCE		
	:	1250 0.5		
Check tolerance mm + Shutoff solenoid	:	0.6		
Volt	:	12		
EXHAUST-GAS RECIRCULATION				
Rated speed rpm	:	1000		
Del. quantity cm3/1000 strokes	:	21.4		
Tolerance cm3/1000 str. +-	:	1.0		
Check tolerance cm3/1000s. +-	:	4.0		
Shutoff solenoid Volt	:	12		
START TRANSITION				
0-4-1		750		

Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt	: 10.		
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt		_	
ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,7 Tolerance mm +-: +-0,1 Dimension KF mm : 6,0 Tolerance mm +-: +-0,2 Dimension MS mm : 1,4 Tolerance mm +-: +-0,2			

MICROSWITCH

SET

3/m : 0,8...3,0 : ARF 12,0

End of test-specification sheet

Rated speed rpm : 350

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.02.96 Test oil : ISO 4113

Part no. : 0 460 484 110 Pump designation : VE4/8F2300R425-14

Customer—spec. information Customer : PSA

Motor : XUD9AY-L3 Cit.ZX

Power KW : 50.0

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C +- : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm +- : +-0,2
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.5
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Supply pomp

pressure bar : 6.0 Tolerance bar + : 0.3

Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 30.2

Tolerance

cm3/1600 str. +-: 0.5

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 5.0

Tolerance

cm3/1000 str. + : 0.5

Shutoff solenoid

Volt : 12

IDLE DELIVERY

Rated speed rpm : 400

Del. quantity cm3/1000 strokes : 13.0

Tolerance

cm3/1000 str. + : 1.0

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid Volt	: 12	Rated speed rpm : 1250
HIGH IDLE SETTING	‡	Del. quantity cm3/1000 strokes : -1.0
Rated speed rpm Del. quantity	: 475 T	Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid
cm3/1000 strokes Tolerance	: 9.5	Volt : 12
cm3/1000 str. +- Shutoff solenoid	+	INJECTION-PUMP TEST SPECIFICATIONS
Volt	: 12 +	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED RE	EGULATION +	Rated speed rpm : 2000
Rated speed rpm Del. quantity	: 2650	·
cm3/1000 strokes Tolerance	: 11.0	SV travel mm : 7.6 Tolerance mm +-: 0.4 Check
cm3/1000 str. +- Shutoff solenoid	: 2.0	tolerance mm + : 0.7 Shutoff solenoid
Volt	: 12	Volt : 12
SET GRADUATED STAR	PITING DELIVERY	Rated speed rpm : 800
CONTROL LEVER, IDL		SV travel mm : 0.8
Rated speed rpm	: 100	Tolerance mm +-: 0.4 Check
Del. quantity cm3/1000 strokes	+	tolerance mm +-: 0.7 Shutoff solenoid
Tolerance cm3/1000 str. +-	+	Volt : 12
Shutoff solenoid	+	SUPPLY PUMP PRESSURE CHARACTERISTIC
Volt	: 12	Rated speed rpm : 2200
LOAD-DEPENDENT STA	ADT OF OF THERY	Supply pomp
SETTING	ARI OF DELIVERI	pressure bar : 8.5 Tolerance bar + : 0.3
DELIVERY DIFFERENCE	SE -	Shutoff solenoid Volt : 12
Rated speed rpm	: 1250	Rated speed rpm : 500
Del. quantity cm3/1000 strokes	: -6.0	Supply pomp pressure bar : 3.6
Tolerance cm3/1000 str. +-	: 1.0	Tolerance bar +-: 0.3 Shutoff solenoid
Shutoff solenoid	+	Volt : 12
Volt	: 12	OVERFLOW QUANTITY
PRESSURE DIFFERENCE	E ±	Rated speed rpm : 2200
Rated speed rpm	: 1250	Overflow quantity
Del. quantity cm3/1000 strokes	: -0.2	ccm/10s : 97.2 Tolerance
Tolerance cm3/1000 str. +	: 0.1	ccm/10s + : 41.6
Shutoff solenoid Volt	: 12	Check tolerance ccm/10s + : 55.5
TIMING-DEVICE TRAV	EL DIFFERENCE	Shutoff solenoid Volt : 12

		Charle And annua		
Rated speed rpm		+ Check tolerance + cm3/1000s. +-	: 3.0	
Overflow quantity ccm/10s	: 63.3	+ Shutoff solenoid + Volt	: 12	
Tolerance ccm/10s +-	: 22.2	Rated speed rpm	: 1250	
Check tolerance		- Del. quantity - cm3/1000 strokes		
ccm/10s +- Shutoff solenoid	: 34.7	Tolerance cm3/1000 str. +		
Volt	: 12	Check tolerance cm3/1000s.		
DELIVERY AND BREAK	CAWAY CHARACTERISTIC	Shutoff solenoid	· 2.2 : 12	
Rated speed rpm Del. quantity	: 2650		. 16	
cm3/1000 strokes	: 11.0	MECHANICAL SHUTOFF		
cm3/1000 str. +- Check tolerance	: 2.0	Rated speed rpm Del. quantity	: 2200	
cm3/1000s. +- Shutoff solenoid	: 4.0	cm3/1000 strokes	: 1.5	
Volt	: 12	cm3/1000 str. + :	: 1.5	
Rated speed rpm Del. quantity	: 2500	cm3/1000s. + :	: 1.5	
cm3/1000 strokes Tolerance	: 22.5	+ Volt	: 12	
cm3/1000 str. +-	: 3.0	ELECTR. SHUTOFF		
cm3/100Gs. +- Shutoff solenoid		CONTROL LEVER, IDLE	E STOP	
Volt	: 12	Rated speed rpm : Del. quantity	: 400	
Rated speed rpm Del. quantity	: 2900	cm3/1000 strokes	: 1.5	
cm3/1000 strokes	: 1.5	cm3/1000 str. + :	: 1.5	
cm3/1000 str. +- Check tolerance	: 1.5	cm3/1000s. +-	: 1.5	
cm3/1000s. +- Shutoff solenoid		Ŧ		
Volt	: 12	Ŧ		
Rated speed rpm Del. quantity	: 2200	Ŧ		
cm3/1000 strokes Tolerance	: 33.0	CHECKING LOAD-DEPER	NDENT	_
cm3/1000 str. +- Check tolerance	: 1.0	DELIVERY DIFFERENCE	•	
cm3/1000s. +- Shutoff solenoid	: 2.2	+		
Volt	: 12	Rated speed rpm Del. quantity cm3/1000 strokes		
Rated speed rpm Del. quantity	: 500	+ Tolerance + cm3/1000 str. +-:		
cm3/1000 strokes Tolerance	: 31.3	+ Check tolerance		
cm3/1000 str. +-	: 1.5	- cm3/1000s. +-: - Shutoff solenoid		
		+ Volt	: 12	

TIMING-DEVICE TRA	VEL	DIFFERENCE	
Rated speed rpm Del. quantity	:	1250	
cm3/1000 strokes Tolerance	:	-1.0	
cm3/1000 str. +- Check tolerance	:	0.1	
cm3/1000s. +- Shutoff solencid	:	0.1	
Volt	:	12	
DELIVERY DIFFEREN	CE		
Rated speed rpm Del. quantity	:	1250	
cm3/1000 strokes Tolerance	:	5.0	
cm3/1000 str. +- Check tolerance	:	3.0	
cm3/1000s. ← Shutoff solenoid	:	3.0	
Volt	:	12	
PRESSURE DIFFERENCE	Œ		
Rated speed rpm Supply pomp	•	1250	
pressure bar Tolerance bar +-	• •	-1.5 0.3	
Shutoff solenoid Volt	:	12	
TIMING-DEVICE TRAN	/EL	DIFFERENCE	
Rated speed rpm	:	1250	
Tolerance mm: +- Check	:	0.5	
tolerance mm +- Shutoff solenoid	:	0.6	
Volt	:	12	
EXHAUST-GAS RECIRC	CULA	TION	
Rated speed rpm Del. quantity	:	1000	
cm3/1000 strokes Tolerance	:	19.4	
	:	1.0	
cm3/1000s. +- Shutoff solenoid	:	4.0	
Volt	:	12	

Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt	
Rated speed rpm	: 225
Del. quantity cm3/1000 strokes	: 54.0
Tolerance cm3/1000 str. +- Shutoff solenoid	: 17.0
Volt	: 12
ASSEMBLY AND ADJUS	STMENT DIMENSIONS
Dimension K mm Tolerance mm + Dimension KF mm Tolerance mm + Dimension MS mm Tolerance mm +	: 3,7 : +-0,1 : 6,0 : +-0,2 : 1,4 : +-0,2
MICROSWITCH SET	

CONTROL LEVER POSITION SET

mm

Control lever position YA mm : 27,8..31,8

: 0,8...3,0

: ARF 12,0

Control lever

position YB mm : 74,0..85,0

End of test-specification sheet

START TRANSITION

Rated speed rpm : 350

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 24.01.95 Edition : ISO 4113 Test oil

: 0 460 484 057 Part no. Pump designation: VE4/8F2300R425-3

Customer-spec. information

Customer : PSA

Motor : XUD9AL - BVA

## TEST BENCH REQUIREMENTS

Overflow

0.55 restriction mm :

0.35 Inler press. bar : Tolerance bar + : 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

bar 130 Tolerance bar +-:

: 1 680 750 073 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x Length mm : 450

#### REMARKS

## BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 0,3 Tolerance mm + : + 0.02

Outlet : A

#### INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm Tolerance mm +: 0.2

Shutoff solenoid

Volt 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250 Supply pomp pressure bar Tolerance bar +-: 0.3

Shutoff solenoid

Valt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

1250 Rated speed rpm : Del. quantity

cm3/1000 strokes : 30.2

Tolerance

cm3/1000 str. +: 0.5

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 5.0

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid

12 Volt

#### IDLE DELIVERY

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 13.0

Tolerance

cm3/1000 str. + :1.0

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

12 Volt

HIGH IDLE SETTING

Rated speed rpm :	475	+ Shutoff solenoid
Del. quantity		+ Volt : 12
cm3/1000 strokes :	9.5	+
Tolerance		
cm3/1000 str. +-:	1.0	+ INJECTION-PUMP TEST SPECIFICATIONS
Shutoff solenoid		+
Volt :	12	† TIMING DEVICE CHARACTERISTIC
		+
FULL-LOAD SPEED REG	ULATION	+ Rated speed rpm : 2000
	0.177	+
Rated speed rpm :	2650	+ SV travel mm : 7.1
Del. quantity	44.5	† Tolerance mm + : 0.4
cm3/1000 strokes :	11.0	+ Check
Tolerance cm3/1000 str. +-:	2.0	tolerance mm +: 0.7
Shutoff solenoid	2.0	+ Shutoff solenoid
Volt :	12	† Volt : 12
, ,	12	Rated speed rpm : 800
STARTING FUEL DELIV	ERY	T Nated speed (pii) . Sou
OTANTING TOLL DELIV	£(\)	F SV travel mm : 0.7
Rated speed rpm :	100	+ Tolerance mm +-: 0.4
Del. quantity	.55	+ Check
cm3/1000 strokes :	55.0	tolerance mm +: 0.7
Tolerance		+ Shutoff solenoid
cm3/1000 str. +-:	13.0	+ Volt : 12
Shutoff solenoid		+
Volt :	12	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
		+
		+ Rated speed rpm : 2200
LASS SERVICENT OFF	- 65 65 50	+ Supply pomp
LOAD-DEPENDENT STAR	T OF DELIVERY	+ pressure bar : 7.6
SETTING		+ Tolerance bar + : 0.3
APITUENU ATREPARIAE		+ Shutoff solenoid
DELIVERY DIFFERENCE		+ Volt : 12
Rated speed rpm :	1250	+ Rated speed rpm : 500
Del. quantity	1230	+ Rated speed rpm : 500 + Supply pomp
cm3/1000 strokes :	-7.0	pressure bar : 3.0
Tolerance	7.0	Tolerance bar +: 0.3
cm3/1000 str. + :	1.0	+ Shutoff solenoid
Shutoff solenoid		Volt : 12
Volt :	12	
		+ OVERFLOW QUANTITY
PRESSURE DIFFERENCE		+
		+ Rated speed rpm : 2200
Rated speed rpm :	1250	+ Overflow quantity
Del. quantity		+ ccm/10s : 97.2
cm3/1000 strokes :	-0.2	+ Tolerance
Tolerance		+ ccm/10s +: 41.6
cm3/1000 str. +:	0.1	†
Shutoff solenoid	13	+ Check tolerance
Volt :	12	+ ccm/10s +: 55.5 + Shutoff solenoid
TIMING-DEVICE TRAVE	NT FEEDENCE	+ Volt : 12
ITUTIO DESTEE LUNAE	C VAI / ENLINGE	1
Rated speed rpm :	1250	Rated speed rpm : 500
Del. quantity		+ Overflow quantity
cm3/1000 strokes :	-1.2	+ ccm/10s : 63.8
Tolerance	_	† Tolerance
cm3/1000 str. +-:	0.1	+ ccm/10s +-: 22.2

		+ Del. quantity
Check tolerance		+ cm3/1000 strokes : 30.2
ccm/10s +:	34.7	+ Tolerance
Shutoff solenoid	J-1.1	+ cm3/1000 str. + : 0.5
Volt :	12	+ Check tolerance
	12	+ cm3/1000s. + : 2.2
DELIVERY AND BREAKAW	AV CHADACTEDISTIC	
DELIVERY AND BREAKAW	AT CHARACTERISTIC	+ Shutoff solenoid
Dada da ana ad	2450	+ Volt : 12
Rated speed rpm :	2650	†
Del. quantity	14 8	
cm3/1000 strokes :	11.0	+ MECHANICAL SHUTOFF
Tolerance		†
cm3/1000 str. +:	2.0	+ Rated speed rpm : 2200
Check tolerance		+ Del. quantity
cm3/1000s. + :	4.0	+ cm3/1000 strokes : 1.5
Shutoff solenoid		+ Tolerance
Volt :	12	+ cm3/1000 str. $+$ : 1.5
		+ Check tolerance
Rated speed rpm :	2500	+ cm3/1000s, +-: 1.5
Del. quantity		+ Shutoff solenoid
cm3/1000 strokes :	22.5	+ Volt : 12
Tolerance		1
cm3/1000 str. +:	3.0	
Check tolerance	J.J	ELECTR. SHUTOFF
cm3/1000s. +-:	5.0	CONTROL LEVER, IDLE STOP
Shutoff solenoid	2.0	T CONTROL LEVER, IDEE STOP
Volt :	12	I Potad and the 100
, voce	12	Rated speed rpm : 400
Dated around aus	2000	+ Del. quantity
Rated speed rpm :	2900	+ cm3/1000 strokes : 1.5
Del. quantity	7.0	+ Tolerance
cm3/1000 strokes :	3.0	$+ \text{ cm}^3/1000 \text{ str.} + : 1.5$
Tolerance	3.0	theck tolerance
cm3/1000 str. +:	3.0	+  cm3/1000s. + -: 1.5
Check tolerance		†
cm3/1000s. +:	3.0	†
Shutoff solenoid		†
Volt :	12	+
		†
Rated speed rpm :	2200	†
Del. quantity		+
cm3/1000 strokes :	33.0	+ CHECKING LOAD-DEPENDENT
Tolerance		+ START OF DELIVERY
cm3/1900 str. +→:	1.0	+
Check tolerance		+ DELIVERY DIFFERENCE
cm3/1000s. +-:	2.2	+
Shutoff solenoid		Rated speed rpm : 1250
Volt :	12	+ Del. quantity
	_	+ cm3/1000 strokes : -8.0
Rated speed rpm :	500	Tolerance
Del. quantity	= :	+ cm3/1000 str. +: 5.0
cm3/1000 strokes :	31.3	- Check tolerance
Tolerance	- · · · ·	+ cm3/1000s. +-: 5.0
cm3/1000 str. +:	1.5	+ Shutoff solenoid
Check tolerance		+ Volt : 12
cm3/1000s. +:	3.0	, , ,
Shutoff solenoid	J.U	TIMING-DEVICE TRAVEL DIFFERENCE
Volt :	12	TENENO PETTE TRAVEL DIFFERENCE
,	16	Rated speed rpm : 1250
Pated eneed non -	1250	
Rated speed rpm :	1200	+ Del. quantity + cm3/1000 strokes : -1.2
		T. cilio/ rough strukes : -1.2

Tolerance	
cm3/1000 str. +-	: 0.1
Check tolerance	
cm3/1000s. +-	: 0.1
Shutoff solenoid	
Volt	: 12
	V
DELIVERY DIFFEREN	CF
Rated speed rpm	: 1250
Del. quantity	
cm3/1000 strokes	: 5.0
Tolerance	
cm3/1000 str. +-	: 3.0
Check tolerance	
cm3/1000s. +-	:/ 3.0
Shutoff solenoid	•
Volt	: 12
PRESSURE DIFFEREN	CE
Rated speed rpm	: 1250
Supply pomp	
pressure bar	: -1.5
Tolerance bar +-	: 0.3
Shutoff solenoid	
Valt	: 12
TIMING-DEVICE TRA	VEL DIFFERENCE
Datasi speed sur	4250
Rated speed rpm	: 1250
Tolerance mm +	: 0.5
Check	. 0 /
tolerance mm +-	: 0.6
Shutoff solenoid Volt	: 12
VOLU	: 12
START TRANSITION	
Rated speed rpm	: 350
Del. quantity	
cm3/1000 strokes	: 30.0
Tolerance	
cm3/1000 str. +-	: 10.0
Shutoff solenoid	
Volt	: 12
Rated speed rpm	: 225
Del. quantity	<b>E</b> / <b>A</b>
cm3/1000 strokes	: 54.0
Tolerance	. 47.0
cm3/1000 str. +	: 17.0
Shutoff solenoid Volt	: 12
V4 11 1	: 12
7011	
ASSEMBLY AND ADJUS	TMENT NYMENICTONIC

Dimension	K mm	: 3,7
Tolerance	mm +-	: +-0,1
Dimension	KF mm	: 6,0
Tolerance	mm +-	: +-0,2
Dimension	MS mm	: 1,4
Tolerance	mm +-	: +-0,2

CONTROL LEVER POSITION SET

Control lever position YA mm : 33,8..37,8

Control lever position YB mm : 63,0..77,0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.01.95 Test oil : ISO 4113

Part ap. : 0 460 484 064 Pump designation : VE4/8F2300R425-5

Customer-spec. information Customer : PSA Motor : XUD9 A-L

#### TEST BENCH REQUIREMENTS

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm : 450

#### REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm + : +0,02
Outlet : A

#### INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Supply pomp
pressure bar : 6.0
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 30.2
Tolerance
cm3/1000 str. + : 0.5
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 4.5
Tolerance
cm3/1000 str. +-: 0.5
Shutoff solenoid
Volt : 12

#### IDLE DELIVERY

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 13.0
Tolerance
cm3/1000 str. +- : 1.0
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HIGH IDLE SETTING

Rated speed rpm : 475 Del. quantity cm3/1000 strokes : 9.5 Tolerance	+ Shutoff solenoid + Volt : 12
cm3/1000 str. —: 1.0 Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Rated speed rpm : 2000
Rated speed rpm : 2650	SV travel mm : 7.1
Del. quantity cm3/1000 strokes : 11.0	+ Tolerance mm +-: 0.4 + Check
Tolerance cm3/1000 str. +-: 2.0	tolerance mm + : 0.7 Shutoff solenoid
Shutoff solenoid Volt : 12	† Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 800
STARTING FOLL DELIVERT	T SV travel mm : 1.6
Rated speed rpm : 100 Del. quantity	Tolerance mm +: 0.4
cm3/1000 strokes : 55.0 Tolerance	tolerance mm + : 0.7
cm3/1000 str. +-: 13.0	+ Shutoff solenoid + Volt : 12
Shutoff solenoid Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
	+ Rated speed rpm : 2200
	+ Supply pomp
LOAD-DEPENDENT START OF DELIVERY SETTING	+ pressure bar : 8.5 + Tolerance bar + : 0.3
DELIVERY DIFFERENCE	+ Shutoff solenoid + Volt : 12
	+
Rated speed rpm : 1250 Del. quantity	Rated speed rpm : 500 Supply pomp
cm3/1000 strokes : -6.0	+ pressure bar : 3.6
Tolerance	+ Tolerance bar + : 0.3
cm3/1000 str. +-: 1.0	+ Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	T OVERFLOW QUANTITY
PRESSURE DIFFERENCE	T OAEKLEOM GOMAITII
	Rated speed rpm : 2200
Rated speed rpm : 1250	+ Overflow quantity
Del. quantity cm3/1 <b>000</b> strokes : -0.2	+ ccm/10s : 97.2 + Tolerance
Tolerance cm3/1000 str. +-: 0.1	+ ccm/10s +-: 41.6
Shutoff solenoid	† Check tolerance
Volt : 12	+ ccm/10s + : 55.5 + Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE	Volt : 12
Rated speed rpm : 1250 Del. quantity	Rated speed rpm : 500 Overflow quantity
cm3/1000 strokes : -1.0 Tolerance	ccm/10s : 63.8  + Tolerance
cm3/1000 str. +-: 0.1	+ ccm/10s +-: 22.2

				Del. quantity		
Check tolerance			Ţ	cm3/1000 strokes	:	30.2
ccm/10s +	-:	34.7	+	Tolerance		
Shutoff solenoid Volt	•	12	İ	cm3/1000 str. +- Check tolerance	:	0.5
1011	•	12	1	cm3/1000s. +-	:	2.2
DELIVERY AND BRE	AKAWA	Y CHARACTERISTIC	+	Shutoff solenoid		-
Rated speed rpm		2650	†	Volt	:	12
Del. quantity	•	2030	I			
cm3/1000 strokes	:	11.0	+			
Tolerance cm3/1000 str. +		2.0	†	ELECTR. SHUTOFF	_	CTOD
Check tolerance		2.0	I	CONTROL LEVER, ID		3108
cm3/1000s. +	- :	4.0	+	Rated speed rpm	:	400
Shutoff solenoid Volt		12	†	Del. quantity		4 5
VOLE	·	12	Ī	cm3/1000 strokes Tolerance	:	1.5
Rated speed rpm	:	2500	+	cm3/1000 str. +-	:	1.5
Del. quantity cm3/1000 strokes		<b>၁</b> ၁ ເ	+	Check tolerance		4 "
Tolerance	Ť	<b>2</b> 2.5	1	cm3/1000s.	•	1.5
cm3/1000 str. +		3.0	+			
Check tolerance cm3/1000s. +		5.0	†			
Shutoff solenoid		5.0	Į			
Volt	:	12	+			
Rated speed rpm	•	2900	1	CHECKING LOAD-DEPI	-NA	FNT
Del. quantity			1	START OF DELIVERY	_110	CIVI
cm3/1000 strokes	:	3.0	†	AEL TUENV ATERNATU	-	
Tolerance cm3/1000 str. +	- :	3.0	1	DELIVERY DIFFEREN	٦E	
Check tolerance			+	Rated speed rpm	:	1250
cm3/1000S. + Shutoff solenoid		3.0	†	Del. quantity cm3/1000 strokes		9 F
Voit	:	12	I	Tolerance	•	<b>-8.</b> 5
			+	cm3/1000 str. +-		5.0
Rated speed rpm Del. quantity	:	2200	†	Check tolerance cm3/1000s. +-		5.0
cm3/1000 strokes	:	33.0	Ţ	cm3/1000S. +- Shutoff solenoid	•	5.0
Tolerance			+	Volt	:	12
cm3/1000 str. + Check tolerance	- :	1.0	İ	TIMING-DEVICE TRAV	/EI	DIFFEDENCE
cm3/1000s. +		2.2	1	THE PERIOD PLATE INVI	,	OAT I ENLITUE
Shutoff solenoid		12	+	Rated speed rpm	:	1250
Volt	:	12	İ	Del. quantity cm3/1000 strokes	•	-1.0
Rated speed rpm	:	500	+	Tolerance		
Del. quantity		71 7	+	cm3/1000 str. +-	:	0.1
cm3/1000 strokes Tolerance	÷	31.3	‡	Check tolerance cm3/1000s. +-	:	0.1
cm3/1000 str. +	- :	1.5	+	Shutoff solenoid	-	
Check tolerance cm3/1000s. +	- :	3.0	†	Volt	:	12
Shutoff solenoid		J.U	Ţ	DELIVERY DIFFERENCE	Œ	
Volt	:	12	+			4050
Rated speed rpm	•	1250	İ	Rated speed rpm Del. quantity	:	1250
nated speed ipin	•	, 200	1	cm3/1000 strokes	:	5.0
			•			

Tolerance
cm3/1000 str. +: 3.0
Check tolerance
cm3/1000s. +: 3.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pomp
pressure bar : -1.5
Tolerance bar + : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm + : 0.5
Check
tolerance mm + : 0.6
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm :

Del. quantity
cm3/1000 strokes : 30.0
Tolerance
cm3/1000 str. +-: 10.0
Shutoff solenoid
Volt : 12

350

Rated speed rpm : 225
Del. quantity
cm3/1000 strokes : 54.0
Tolerance
cm3/1000 str. +-: 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm + : +-0,1
Dimension KF mm : 6,0
Tolerance mm + : +-0,2
Dimension MS mm : 1,4
Tolerance mm + : +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 28,8..32,8

Control lever

position YB mm : 74,0..85,0

Refer to Service adjustment instru See microcard(s)	ctions.
Edition Test oil	: 10.11.95 : ISO 4113
Part no. Pump designation	: 0 460 484 070 : VE4/8F2300R425-6
Customer-spec. in Customer Motor	formation : PSA : XUD9AY/L3 Cit.ZX
TEST BENCH REQUIR	EMENTS
Calibrating-oil return temperature °C Tolerance °C +-	: 45 : 1
Overflow restriction mm	: 0.55
Inlet press. bar Tolerance bar +	: 0.35 : 0.05
Test nozzle holde assembly	: 1 688 901 022
Opening pressure bar Tolerance bar +-	: 130 : 3
Test lines	: 1 680 750 073
Outside diameter	: 6.00
x inside diameter x length mm	: 2.00 : 450
REMARKS	

Plunger stroke mm Tolerance mm +- Outlet				
INJECTION PUMP SE	TTING VALUES			
TIMING DEVICE TRA	VEL			
Rated speed rpm	: 1250			
Setting mm Tolerance mm +-	: 3.5 : 0.2			
Shutoff solenoid	: 12			
SUPPLY PUMP PRESSI				
Rated speed rpm	: 1250			
Supply pomp pressure bar	: 6.0			
Tolerance bar +- Shutoff solenoid				
Volt	: 12			
FULL-LOAD DELIV.	WITHOUT BOOST PRESSURE			
Rated speed rpm Del. quantity	: 1250			
cm3/1000 strokes Tolerance	: 30.2			
cm3/1000 str. +-	: 0.5			
cm3/1000 strokes Shutoff solenoid	: 2.0			
Volt	: 12			
HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING				
Rated speed rpm	: 500			
Del. quantity cm3/1000 strokes Tolerance	: 5.0			
cm3/1000 str. +-	: 0.5			
Shutoff solenoid Volt	: 12			
IDLE DELIVERY				
Rated speed rpm Del. quantity	: 400			
cm3/1000 strokes Tolerance	: 13.0			
cm3/1000 str. +-	: 1.0			
Spread cm3/1000 strokes Shutoff solenoid	: 2.0			
Volt	: 12			

Start of delivery blocking

+	Del. quantity
HIGH IDLE SETTING +	cm3/1000 strokes : -1.0
1	Tolerance
Rated speed rpm : 475	cm3/1000 str. + : 0.1
Del. quantity	Shutoff solenoid
cm3/1000 strokes : 9.5	Volt : 12
Tolerance	, ;L
cm3/1000 str. +: 1.0	
Shutoff solenoid	THISCATION DUMP TEST OFFICE CATTONS
	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12 +	
+	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION +	
+	Rated speed rpm : 2000
Rated speed rpm : 2650	
Del. quantity	SV travel mm : 7.6
cm3/1000 strokes : 11.0	Tolerance mm +-: 0.4
Tolerance	Check
cm3/1000 str. +-: 2.0	tolerance mm +-: 0.7
Shutoff solenoid	Shutoff solenoid
Volt : 12	
volt : 12 †	Volt : 12
†	
+	Rated speed rpm : 800
SET GRADUATED STARTING DELIVERY	
CONTROL LEVER, IDLE STOP	SV travel mm : 0.8
+	Tolerance mm +-: 0.4
Rated speed rpm : 100	Check
Del. quantity	tolerance mm +-: 0.7
cm3/1000 strokes : 47.0	Shutoff solenoid
Tolerance	Volt : 12
cm3/1000 str. +: 1.0	. 12
Shutoff solenoid	CURRILY DUMP PRESCUPE CHARACTERISTIC
	SUPPLY PUMP PRESSURE CHARACTERISTIC
Volt : 12 +	
†	Rated speed rpm : 2200
<u> </u>	Cumple mann
T	Supply pomp
LOAD-DEPENDENT START OF DELIVERY	pressure bar : 8.5
LOAD-DEPENDENT START OF DELIVERY SETTING	
	pressure bar : 8.5 Tolerance bar +-: 0.3
SETTING	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid
	pressure bar : 8.5 Tolerance bar +-: 0.3
SETTING  DELIVERY DIFFERENCE	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 1250	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar +-: 0.3
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1000 str. +-: 1.0	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar +-: 0.3 Shutoff solenoid
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1000 str. +-: 1.0 Shutoff solenoid	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar +-: 0.3
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1000 str. +-: 1.0	pressure bar : 8.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1000 str. +-: 1.0 Shutoff solenoid	pressure bar : 8.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar + : 0.3 Shutoff solenoid
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1000 str. +-: 1.0 Shutoff solenoid	pressure bar : 8.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : -6.0  Tolerance  cm3/1C00 str. +-: 1.0  Shutoff solenoid  Volt : 12	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1000 str. +- : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2200
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1C00 str. +- : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2200 Overflow quantity
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1C00 str. +- : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2200 Overflow quantity ccm/10s : 97.2
DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1C00 str. +- : 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2200 Overflow quantity ccm/10s : 97.2 Tolerance
DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1C00 str. +-: 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2200 Overflow quantity ccm/10s : 97.2
DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1000 str. +-: 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1	pressure bar : 8.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2200 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6
DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1C00 str. +-: 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid	pressure bar : 8.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2200 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance
DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1000 str. +-: 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1	pressure bar : 8.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2200 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5
DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1000 str. +-: 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12	pressure bar : 8.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2200 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid
DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1C00 str. +-: 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid	pressure bar : 8.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2200 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +-: 41.6  Check tolerance ccm/10s +-: 55.5
DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1000 str. +-: 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12	pressure bar : 8.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2200 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid
DELIVERY DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -6.0 Tolerance cm3/1000 str. +-: 1.0 Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12	pressure bar : 8.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Supply pomp pressure bar : 3.6 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2200 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid

Tolerance cm3/1000 strokes : 1.5 cm3/1000 strokes : 22.5 cm3/1000 strokes : 2.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 2.5 cm3/1000 strokes : 2.5 cm3/1000 strokes : 1.5 cm3/1000 st	Overflow quantity ccm/10s :	63.8	+ Shutoff solenoid + Volt : 12
Check tolerance   Crox/100   + : 34.7   Shutoff solenoid   12   Check tolerance   Cm3/1000   Str. + : 0.5	Tolerance ccm/10s +-:	22.2	Rated speed rpm : 1250
Shutoff solenoid			- cm3/1900 strokes : 30.2
DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2650 bel. quantity cm3/1000 strokes : 11.0  Rated speed rpm : 2.0  Rated speed rpm : 2.0  Rated speed rpm : 2.0  Rated speed rpm : 2.0  Rated speed rpm : 2.0  Rated speed rpm : 2.0  Rated speed rpm : 2.0  Rated speed rpm : 2.0  Rated speed rpm : 2500  Del. quantity cm3/1000 strokes : 1.5  Rated speed rpm : 2500  Del. quantity cm3/1000 strokes : 22.5  Tolerance cm3/1000s + : 3.0  Check tolerance cm3/1000s + : 5.0  Shutoff solenoid  Volt : 12  Rated speed rpm : 2900  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000	Shutoff solenoid		+ cm3/1000 str. +-: 0.5
Rated speed rpm : 2650  Del. quantity cm3/1000 strokes : 11.0  Tolerance cm3/1000S. +: 2.0  Rated speed rpm : 2500  Del. quantity cm3/1000 strokes : 1.5  Shutoff solenoid  Volt : 12  Rated speed rpm : 2500  Del. quantity cm3/1000 strokes : 22.5  Tolerance cm3/1000 strokes : 22.5  Tolerance cm3/1000 strokes : 22.5  Shutoff solenoid  Volt : 12  Rated speed rpm : 2900  Del. quantity cm3/1000 strokes : 1.5  Shutoff solenoid  Volt : 12  Rated speed rpm : 2900  Shutoff solenoid  Volt : 12  Rated speed rpm : 2900  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Shutoff solenoid  Volt : 12  Rated speed rpm : 2200  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 33.0  Tolerance cm3/1000 strokes : 33.0  Tolerance cm3/1000 strokes : 33.0  Tolerance cm3/1000 strokes : 33.0  Tolerance cm3/1000 strokes : 33.0  Tolerance cm3/1000 strokes : 33.0  Tolerance cm3/1000 strokes : 33.0  Tolerance cm3/1000 strokes : 33.0  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 3.0  Shutoff solenoid  Volt : 12			+ cm3/1000s. $+$ : 2.2
Del. quantity cm3/1000 strokes : 11.0 Tolerance cm3/1000 strokes : 2.0 theck tolerance cm3/1000 strokes : 2200 Del. quantity cm3/1000 strokes : 1.5 Shutoff solenoid Volt : 12 Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 22.5 Tolerance cm3/1000 strokes : 22.5 Tolerance cm3/1000 strokes : 22.5 Tolerance cm3/1000 strokes : 22.5 Tolerance cm3/1000 strokes : 22.5 Tolerance cm3/1000 strokes : 22.5 Tolerance cm3/1000 strokes : 22.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 33.0 Tolerance cm3/1000 strokes : 33.0 Tolerance cm3/1000 strokes : 33.0 Tolerance cm3/1000 strokes : 33.0 Tolerance cm3/1000 strokes : 33.0 Tolerance cm3/1000 strokes : 33.0 Tolerance cm3/1000 strokes : 33.0 Tolerance cm3/1000 strokes : 33.0 Tolerance cm3/1000 strokes : 33.0 Tolerance cm3/1000 strokes : 33.0 Tolerance cm3/1000 strokes : 33.0 Tolerance cm3/1000 strokes : 33.0 Tolerance cm3/1000 strokes : 33.0 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3			
Tolerance cm3/1000 str. + : 2.0 check tolerance cm3/1000s. + : 4.0 shutoff solenoid Volt : 12 cm3/1000 str. + : 1.5 check tolerance cm3/1000 str. + : 3.0 check tolerance cm3/1000 str. + : 3.0 check tolerance cm3/1000 str. + : 3.0 check tolerance cm3/1000 str. + : 1.5 check tolerance cm3/1000 str. + : 3.0 check tolerance cm3/1000 str.	Del. quantity		
Del. quantity	Tolerance		+
Shutoff solenoid   12	Check tolerance		+ Del. quantity
Rated speed rpm : 2500  bel. quantity cm3/1000 strokes : 22.5  Tolerance cm3/1000 str. +: 3.0  Check tolerance cm3/1000s. +: 5.0  Shutoff solenoid Volt : 12  Rated speed rpm : 2900  bel. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.5  Check tolerance cm3/1000 str. +: 1.0  Check tolerance cm3/1000 str. +: 1.0  Check tolerance cm3/1000 str. +: 1.0  Check tolerance cm3/1000 str. +: 1.0  Check tolerance cm3/1000 str. +: 1.0  Check tolerance cm3/1000 str. +: 3.0  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 7.0  Tolerance cm3/1000 strokes : 31.3  Tolerance cm3/1000 strokes : 31.3  Check tolerance cm3/1000 strokes : 31.3  Check tolerance cm3/1000 strokes : 31.3  Check tolerance cm3/1000 strokes : 31.3  Check tolerance cm3/1000 strokes : 31.3  Check tolerance cm3/1000 strokes : 3.0  Shutoff solenoid  Volt : 12	Shutoff solenoid		+ Tolerance
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Tolerance cm3/1000 str. +: 3.0	Del. quantity		+ Shutoff solenoid
Check tolerance	Tolerance		
Shutoff solenoid Volt : 12  Rated speed rpm : 2900 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000 str. +: 1.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2200 Del. quantity cm3/1000 str. +: 1.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 33.0 Tolerance cm3/1000 str +: 1.0 Check tolerance cm3/1000 str -: 1.0 Check tolerance cm3/1000 str -: 1.0 Check tolerance cm3/1000 str -: 1.0 Check tolerance cm3/1000 str -: 1.0 Check tolerance cm3/1000 str -: 1.5 Shutoff solenoid Volt : 12  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 31.3 Tolerance cm3/1000 str -: 3.0 Check tolerance cm3/1000 str -: 3.0 Check tolerance cm3/1000 str -: 3.0 Check tolerance cm3/1000 str -: 3.0 Shutoff solenoid Volt : 12 Check tolerance cm3/1000 str -: 3.0 Shutoff solenoid Volt : 12 Check tolerance cm3/1000 str -: 3.0 Shutoff solenoid Volt : 12 Check tolerance cm3/1000 str -: 3.0 Shutoff solenoid Volt : 12 Check tolerance cm3/1000 str -: 3.0 Shutoff solenoid Volt : 12 Check tolerance cm3/1000 str -: 3.0 Check tolerance cm3/1000 str -: 3.0 Check tolerance cm3/1000 str -: 3.0 Check tolerance cm3/1000 str -: 3.0 Check tolerance cm3/1000 str -: 3.0	Check tolerance		1
Rated speed rpm : 2900  Del. quantity cm3/1000 strokes : 1.5  Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000strokes : 3.5  Shutoff solenoid Volt : 12  Rated speed rpm : 2200 Del. quantity cm3/1000 strokes : 33.0 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000 strokes : 33.0  CHECKING LOAD-DEPENDENT Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000str. +: 1.0 Check tolerance cm3/1000s. +: 2.2 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 1.5 Tolera	Shutoff solenoid		+
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2200 Del. quantity cm3/1000 str. +: 1.0 Check tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 1.0 Check tolerance cm3/1000s. +: 2.2 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000 str. +: 3.0 Check tolerance cm3/1000 str. +: 3.0 Check tolerance cm3/1000 str. +: 3.0 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 str. +: 3.0 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12			+ Del. quantity
Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2200 Del. quantity cm3/1000 str. +: 1.0 Check tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.2 Shutoff solenoid Volt : 12  Rated speed rpm : 500 DeLIVERY DIFFERENCE cm3/1000 str. +: 3.0 Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 31.3 Tolerance Del. quantity cm3/1000 str. +: 3.0 Check tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000str. +: 3.0 Check tolerance cm3/1000str. +: 3.0 Shutoff solenoid Volt : 1.5 Check tolerance cm3/1000str. +: 3.0 Check tolerance cm3/1000str. +: 3.0 Check tolerance cm3/1000str. +: 3.0 Check tolerance cm3/1000str. +: 3.0 Check tolerance cm3/1000str. +: 3.0 Check tolerance cm3/1000str. +: 3.0 Check tolerance cm3/1000str. +: 3.0 Check tolerance cm3/1000str. +: 3.0 Check tolerance cm3/1000str. +: 3.0 Check tolerance cm3/1000str. +: 3.0 Check tolerance cm3/1000str. +: 3.0 Check tolerance cm3/1000str. +: 3.0 Check tolerance cm3/1000str. +: 3.0	Del. quantity		Tolerance
cm3/1000s.       + : 1.5         Shutoff solenoid       12         Rated speed rpm : 2200       CHECKING LOAD-DEPENDENT         Del. quantity       START OF DELIVERY         cm3/1000 str. + : 1.0       DELIVERY DIFFERENCE         cm3/1000s. + : 2.2       Rated speed rpm : 1250         Shutoff solenoid       Pol. quantity         Volt : 12       Check tolerance         cm3/1000 strokes : 31.3       Check tolerance         cm3/1000 strokes : 31.3       Check tolerance         Tolerance       cm3/1000s. + : 3.0         cm3/1000 str. + : 1.5       Shutoff solenoid         Check tolerance       Volt : 12		1.5	+ Check tolerance
Rated speed rpm : 2200		1.5	<del> </del> 
Del. quantity cm3/1000 strokes : 33.0  Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 2.2 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 31.3 Tolerance cm3/1000 strokes : 31.3 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 3.0 Check tolerance cm3/1000s. + : 3.0 Shutoff solenoid Volt : 12		12	‡
cm3/1000 strokes : 33.0       Tolerance cm3/1000 str. +: 1.0       CHECKING LOAD-DEPENDENT START OF DELIVERY         Check tolerance cm3/1000s. +: 2.2       DELIVERY DIFFERENCE         Shutoff solenoid Volt : 12       Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -7.0 Tolerance cm3/1000 strokes : -7.0 Tolerance cm3/1000 str. +: 3.0 Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid Volt : 12 cm3/1000s. +: 3.0		2200	‡
Check tolerance cm3/1000s. +: 2.2 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Pel. quantity cm3/1000 strokes : 31.3 Tolerance cm3/1000 str. +: 3.0 Check tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 3.0  Check tolerance cm3/1000s. +: 3.0  Shutoff solenoid Volt : 12	cm3/1000 strokes :	33.0	
cm3/1000s. +: 2.2       Rated speed rpm : 1250         Shutoff solenoid       Del. quantity         Volt : 12       -7.0         Rated speed rpm : 500       Tolerance         Del. quantity       cm3/1000 strokes : -7.0         Tolerance       cm3/1000 str. +: 3.0         Check tolerance       cm3/1000s. +: 3.0         Shutoff solenoid       Volt : 12         cm3/1000s. +: 3.0	cm3/1000 str. +-:	1.0	+
Volt : 12	cm3/1000s. +-:	2.2	+
Rated speed rpm : 500		12	+ Del. quantity
cm3/1000 strokes : 31.3       + Check tolerance         Tolerance cm3/1000s.       + : 3.0         cm3/1000s.       + : 1.5         Check tolerance cm3/1000s.       + : 12         cm3/1000s.       + : 3.0		500	+ Tolerance
cm3/1000 str. + :       1.5       + Shutoff solenoid         Check tolerance cm3/1000s. + :       3.0       + Volt :       12	cm3/1000 strokes :	31.3	+ Check tolerance
cm3/1000s. +-: 3.0 +	cm3/1000 str. +-:	1.5	+ Shutoff solenoid
		3.0	+

Rated speed rpm Del. quantity	:	1250	
cm3/1000 strokes Tolerance	:	-1.0	
cm3/1000 str. +-	. :	0.1	
Check tolerance cm3/1000s. +-	:	0.1	
Shutoff solenoid Volt	:	12	
DELIVERY DIFFEREN	CE		
Rated speed rpm Del. quantity	:	1250	
cm3/1000 strokes	:	5.0	
cm3/1000 str. +- Check tolerance	:	3.0	
cm3/1000s. +- Shutoff solenoid	:	3.0	
Valt	ů,	12	
PRESSURE DIFFEREN	CE		
Rated speed rpm Supply pomp	:	1250	
pressure bar Tolerance bar +-	:	-1.5 0.3	
Shutoff solenoid Volt	:	12	
TIMING-DEVICE TRA		_	
made A		4250	
Rated speed rpm Tolerance mm +- Check		1250 0.5	
tolerance mm +- Shutoff solenoid	:	0.6	
Volt	:	12	
EXHAUST-GAS RECIR	CUL	ATION	
Rated speed rpm	:	1000	
Del. quantity cm3/1000 strokes	:	21.4	
Tolerance cm3/1000 str. +-		1.0	
Check tolerance	:	4.0	
cm3/1000s. +- Shutoff solenoid	:	12	
Volt START TRANSITION	:	12	
		750	
Rated speed rpm Del. quantity	:	350	
cm3/1000 strokes	:	30.0	

Tolerance cm3/1000 str. +- Shutoff solenoid Volt	:	10.0 12
Rated speed rpm Del. quantity	:	225
cm3/1000 strokes Tolerance	:	54.0
cm3/1000 str. +- Shutoff solenoid	:	17.0
Volt	:	12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension		:	3,7
Tolerance	mm +-	:	+-0,1
Dimension	KF mm	:	6,0
Tolerance	mm +-	:	+-0,2
Dimension	MS mm	•	1,4
Tolerance	mm +-	:	÷-0,2

MICROSWITCH SET

mm : 0,8..3,0 : ARF 12,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 27,8..31,8

Control lever

position YB mm : 74,0..85,0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.11.95 Test oil : ISO 4113

Part no. : 0 460 484 092 Pump designation : VE4/8F2300R425-8

Customer—spec. information Customer : PSA

Motor : XUD9A-L BVA
Power KW : 51.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar ←: 0.05

Test nozzle holde

assembly : 1 688 90% 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

#### REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm + : +0,02
Outlet : A

## INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.3

Tolerance mm + : 0.2

Shutoff solenoid

Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Supply pomp
pressure bar : 5.1
Tolerance bar + : 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 30.2
Tolerance
cm3/1000 str. +-: 0.5
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 str. +-: 0.5
Shutoff solenoid
Volt : 12

## IDLE DELIVERY

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 13.0
Tolerance
cm3/1000 str. +- : 1.0
Spread
cm3/1000 strokes : 2.0

Shutoff solenoid Volt : 12	Rated speed rpm : 1250 Del. quantity
HIGH IDLE SETTING	cm3/1000 strokes : -1.2 Tolerance
Raited speed rpm : 475	cm3/1000 str. + : 0.1 Shutoif solenoid
Del. quantity	Volt : 12
cm3/1000 strokes : 9.5 Tolerance	
cm3/1000 str. +-: 1.0 +	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Rated speed rpm : 2000
Rated speed rpm : 2650	SV travel mm : 7.1
Del. quantity cm3/1000 strokes : 11.0	Tolerance mm +-: 0.4 Check
Tolerance + 2.0 +	tolerance mm + : 0.7 Shutoff solenoid
Shutoff solenoid Volt : 12	Volt : 12
<del>+</del>	Rated speed rpm : 800
STARTING FUEL DELIVERY	SV travel mm : 0.7
Rated speed rpm : 100 +	Tolerance mm + : 0.4 Check
cm3/1000 strokes : 55.0	tolerance mm +: 0.7
Tolerance + : 13.0 +	Shutoff solenoid Volt : 12
Shutoff solenoid + Volt : 12 +	SUPPLY PUMP PRESSURE CHARACTERISTIC
+	_
Ţ.	Rated speed rpm : 2200 Supply pomp
LOAD-DEPENDENT START OF DELIVERY SETTING	pressure bar : 7.6 Tolerance bar + : 0.3
+	Shutoff sclenoid
DELIVERY DIFFERENCE	Volt : 12
Rated speed rpm : 1250 Del. quantity	Rated speed rpm : 500 Supply pomp
cm3/1000 strokes : -7.0 +	pressure bar : 3.0 Tolerance bar + : 0.3
Tolerance + : 1.0 +	Shutoff solenoid
Shutoff solenoid + 12 +	Volt : 12
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
+	Rated speed rpm : 2200
Rated speed rpm : 1250 + Del. quantity +	Overflow quantity ccm/10s : 97.2
cm3/1000 strokes : -0.2 Tolerance	Tolerance ccm/10s +-: 41.6
cm3/1000 str. + : 0.1	
Shutoff solenoid Volt : 12	Check tolerance ccm/10s + : 55.5
TIMING-DEVICE TRAVEL DIFFERENCE	Shutoff solenoid Volt : 12
+	· · · · · ·

Rated speed rpm : 500  Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s +-: 22.2  Check tolerance ccm/10s +-: 34.7  Shutoff solenoid	Shutoff solenoid Volt : 12  Rated speed rpm : 1250 Del. quantity cm3/1G0C strokes : 30.2 Tolerance cm3/1000 str. +-: 0.5 Check tolerance
Volt : 12	cm3/1000s. + : 2.2 Shutoff sclenoid
DELIVERY AND BREAKAWAY CHARACTERISTIC	Volt : 12
Rated speed rpm : 2650 Del. quantity	MECHANICAL SHUTOFF
cm3/1000 strokes : 11.0 Tolerance	Rated speed rpm : 2200
cm3/1000 str. +: 2.0 Check tolerance	Del. quantity  cm3/1000 strokes : 1.5
cm3/1000s. + : 4.0 Shutoff solenoid	Tolerance
Volt : 12	cm3/1000 str. +-: 1.5 Check tolerance
Rated speed rpm : 2500	+ cm3/1000s. +-: 1.5 + Shutoff solenoid
Del. quantity cm3/1000 strokes : 22.5	+ Volt : 12
Tolerance um3/1000 str. +-: 3.0 Check tolerance	ELECTR. SHUTOFF
cm3/1000s. +-: 5.0	CONTROL LEVER, IDLE STOP
Shutoff solenoid Volt : 12	+ Rated speed rpm : 400 + Del. quantity
Rated speed rpm : 2900	cm3/1000 strokes : 1.5 Tolerance
Del. quantity cm3/1000 strokes : 3.0	+ cm3/1000 str. +-: 1.5 + Check tolerance
Tolerance cm3/1000 str. +-: 3.0	+ cm3/1000s. +-: 1.5
Check tolerance cm3/1000s. +-: 3.0	FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid Volt : 12	+ Rated speed rpm : 400 - Del. quantity
Rated speed rpm : 2200	cm3/1000 strokes : 1.5 Tolerance
Del. quantity cm3/1000 strokes : 33.0	cm3/1000 str. + : 1.5 Check tolerance
Tolerance cm3/1000 str. +-: 1.0	+ cm3/1000s. +-: 1.5
Check tolerance cm3/1000s. +: 2.2	‡
Shutoff solenoid Volt : 12	‡
Rated speed rpm : 500	CHECKING LOAD-DEPENDENT
Del. quantity cm3/1000 strokes : 31.3	+ START OF DELIVERY
Tolerance cm3/1000 str. +-: 1.5	+ DELIVERY DIFFERENCE
Check tolerance cm3/1000s. +-: 3.0	+ Rated speed rpm : 1250 +

Del. quantity			+	Del. quantity		
cm3/1000 strokes Tolerance	:	-8.0	†	cm3/1000 strokes	:	30.0
cm3/1000 str. +-	:	5.0	Į	Tolerance cm3/1000 str. +-	:	10.0
Check tolerance		5.0	ţ	Shutoff solenoid		40
cn3/1000s. + Shutoff solenoid	:	5.0	İ	Volt	:	12
Volt	:	12	+			
TIMING-DEVICE TRA	VEL	DIFFERENCE	‡	Rated speed rpm Del. quantity		225
Rated speed rpm	:	1250	<b>†</b>	cm3/1000 strakes Tolerance		54.0
Del. quantity cm3/1000 strokes	:	-1.2	‡	cm3/1000 str. +- Shutoff solenoid	:	17.0
Tolerance cm3/1000 str. +-	:	0.1	‡	Volt	•	12
Check tolerance		0.4	+			
cm3/1000S. +- Shutoff solenoid	:	0.1	‡	ASSEMBLY AND ADJU	STMEN	T DIMENSIONS
Volt	:	12	+	Dimension K mm		
DELIVERY DIFFEREN	ΩE		†	Tolerance mm +- Dimension KF mm	: +-	
	-		+		: +-	
Rated speed rpm	:	1250	+	Dimension MS mm		
Del. quantity cm3/1000 strokes	:	5.0	‡	Tolerance mm +-	: +	0,2
Tolerance			<del>-</del>			
cm3/1000 str. +- Check tolerance	:	3.0	‡	MICROSWITCH SET		
cm3/1000s. +-	:	3.0	+			
Shutoff solenoid Volt	:	12	‡	mm	: 0, : 10	83,0 1.7
			+			•
PRESSURE DIFFERENCE	CE		‡	CONTROL LEVER POST	ITION	
Rated speed rpm Supply pomp	:	1250	‡			
pressure har	:	-1.5	-	Control lever		
Tolerance bar +- Shutoff solenoid	:	0.3	‡	position YA mm	: 33	,837,8
Volt	:	12	<u> </u>	Control Lever position YB mm	• 63	,077,0
TIMING-DEVICE TRAN	/E!.	DIFFERENCE				,0,0
Rated speed rpm	:	1250	+			
Tolerance mm +- Check	:	0.5	‡	End of test-speci:	ficat	ion sheet
tolerance mm +- Shutoff solenoid	:	0.6	Ì			
Volt	:	12	Ī			
			I			
EXHAUST-GAS RECIRC	CULA	ATION	+			
Del. quantity cm3/1000 strokes	:	10.7	Ī			
START TRANSITION			‡			
Rated speed rpm	:	350	‡			

H13

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.11.95 Test oil : ISC 4113

Part no. : 0 460 484 093 Pump designation : VE4/8F2300R425-9

Customer—spec. information Customer : PSA

Motor : XUD9AY-L3 Cit.ZX

Power KW : 51.0

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +- : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm + : +-0,02
Outlet : A

## INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.5
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250 Supply pomp

pressure bar : 6.0 Tolerance bar + : 0.3

Shutoff solenoid Volt :

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 30.2

Tolerance

cm3/1000 str. +-: 0.5 Spread

spread

cm3/1000 strokes : 2.0 Shutoff solenoid

Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 5.0

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid

Volt : 12

#### IDLE DELIVERY

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 13.0

Tolerance

cm3/1000 str. + : 1.0

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid	+
Volt : 12	+ Rated speed rpm : 1250 + Del. quantity
HIGH IDLE SETTING	cm3/1000 strokes : -1.0 Tolerance
Rated speed rpm : 475 Del. quantity	cm3/1000 str. +-: 0.1 Shutoff solenoid
cm3/1000 strokes : 9.5 Tolerance	Volt : 12
cm3/1000 str. + : 1.0	<u> </u>
Shutoff solenoid Volt : 12	INJECTION-PUMP TEST SPECIFICATIONS
FULL-LOAD SPEED REGULATION	TIMING DEVICE CHARACTERISTIC
Rated speed rpm : 2650	Rated speed rpm : 2000
Del. quantity	SV travel mm : 7.6
cm3/1000 strokes : 11.0 Tolerance	Tolerance mm + : 0.4 Check
cm3/1000 str. + : 2.0	tolerance mm +-: 0.7
Shutoff solenoid Volt : 12	+ Shutoff solenoid + Volt : 12
	+ Rated speed rpm : 800
SET GRADUATED STARTING DELIVERY	Naced Speed (pill : 000
CONTROL LEVER, IDLE STOP	+ SV travel mm : 0.8
Rated speed rpm : 100	Tolerance mm + : 0.4 Check
Del. quantity	+ tolerance mm +-: 0.7
Tolerance	+ Shutoff solenoid + Volt : 12
cm3/1000 str. + : 1.0 Shutoff solenoid	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
Volt : 12	T SOPPET POMP PRESSURE CHARACTERISTIC
	Rated speed rpm : 2200
LOAD-DEPENDENT START OF DELIVERY	+ Supply pomp + pressure bar : 8.5
SETTING	Tolerance bar +-: 0.3
	+ Shutoff solenoid
DELIVERY DIFFERENCE	† <b>V</b> olt : 12
Rated speed rpm : 1250 Del. quantity	Rated speed rpm : 500
cm3/1000 strokes : -6.0	+ Supply pomp + pressure bar : 3.6
Tolerance	Tolerance bar + : 0.3
cm3/1000 str. + : 1.0 Shutoff solenoid	+ Shutoff solenoid + Volt : 12
Volt : 12	+
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
	Rated speed rpm : 2200
Rated speed rpm : 1250 Del. quantity	+ Overflow quantity + ccm/10s : 97.2
cm3/1000 strokes : -0.2	Tolerance
Tolerance cm3/1000 str. +-: 0.1	+ ccm/10s + : 41.6
Shutoff solenoid	Check tolerance
Volt : 12	+ ccm/10s +-: 55.5 + Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE	+ Volt : 12

Rated speed rpm : 500 Overflow quantity	+ Check tolerance + cm3/1000S. +-: 3.0 + Shutoff solenoid
ccm/10s : 63.8 Tolerance	Volt : 12
ccm/10s + : 22.2	Rated speed rpm : 1250  Del. quantity
Check tolerance ccm/10s +-: 34.7	cm3/1000 strokes : 30.2
Shutoff solenoid Yolt : 12	cm3/1000 str. + : 0.5
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ cm3/1000s. +-: 2.2 + Shutoff solenoid
Rated speed rpm : 2650	+ Volt : 12
Del. quantity cm3/1000 strokes : 11.0	MECHANICAL SHUTOFF
Tolerance cm3/1000 str. +-: 2.0	+ Rated speed rpm : 2200
Check tolerance cm3/1000s. +-: 4.0	+ Del. quantity + cm3/1000 strokes : 1.5
Shutoff solenoid Volt : 12	+ Tolerance + cm3/1000 str. +-: 1.5
Rated speed rpm : 2500	theck tolerance cm3/1000s. +: 1.5
Del. quantity cm3/1000 strokes : 22.5 Tolerance	+ Shutoff solenoid + Volt : 12
cm3/1000 str. +: 3.0 Check tolerance	ELECTR. SHUTOFF
cm3/1000s. +-; 5.0 Shutoff solenoid	CONTROL LEVER, IDLE STOP
Volt : 12	Rated speed rpm : 400  Del. quantity
Rated speed rpm : 2900 Del. quantity	cm3/1000 strokes : 1.5
cm3/1000 strokes : 1.5 Folerance	cm3/1000 str. +-: 1.5 Check tolerance
cm3/1000 str. +-: 1.5 Check tolerance	cm3/1000s. +-: 1.5
cm3/1000s. +-: 1.5 Shutoff solenoid	‡
Volt : 12	+
Rated speed rpm : 2200 Del. quantity	
cm3/1000 strokes : 33.0 Tolerance	+ CHECKING LOAD-DEPENDENT + START OF DELIVERY
cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +: 2.2	DELIVERY DIFFERENCE
cm3/1000s. +-: 2.2 Shutoff solenoid Volt : 12	Rated speed rpm : 1250
Rated speed rpm : 500	+ Del. quantity + cm3/1000 strokes : -7.0 + Tolerance
Del. quantity cm3/1000 strokes : 31.3	+ cm3/1000 str. + : 3.0 + Check tolerance
Tolerance cm3/1000 str. +-: 1.5	cm3/1000s. +-: 3.0  Shutoff solenoid
	+ Volt : 12

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm Del. quantity	:	1250
cm3/1000 strokes	:	-1.0
Tolerance cm3/1000 str. +-	:	0.1
Check tolerance cm3/1000s. +	:	0.1
Shutoff solenoid Volt	:	12

## DELIVERY DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	_	<b>5</b> 0
Tolerance	•	5.0
		7.0
cm3/1000 str. +	•	3.0
Check tolerance		7.0
cm3/1000s. +-	:	3.0
Shutoff solenoid		4.5
Volt	:	12

## PRESSURE DIFFERENCE

Rated speed rpm	:	1250
Supply pomp		
pressure bar	:	-1.5
Tolerance bar +	:	0.3
Shutoff solenoid		
Volt	:	12

## TIMING-DEVICE TRAVEL DIFFERENCE

Reted speed rpm Tolerance mm +-	:	1250 0.5
Check tolerance mm +- Shutoff solenoid	:	0.6
Volt	:	12

## EXHAUST-GAS RECIRCULATION

Rated speed rpm Del. quantity	:	1000
cm3/1000 strokes	:	21.4
Tolerance cm3/1000 str. +	:	1.0
Check tolerance cm3/1000s. +-	:	4.0
Shutoff solenoid Volt	:	12

# START TRANSITION

Rated	speed	rpm	:	350
-------	-------	-----	---	-----

Del. quantity cm3/1000 strokes	•	30.0
Tolerance cm3/1000 str. +-	•	10.0
Shutoff solenoid	•	12
VOLL	•	12
Rated speed rpm	•	225
Del. quantity cm3/1000 strokes	:	225 54.0
Del. quantity	:	

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	K mm	•	3,7
Tolerance			÷-0,1
Dimension	KF mm	:	6,0
Tolerance	mm +	:	+-0,2
Dimension	MS mm	:	1,4
Tolerance	mm +-	•	+-0,2

## MICROSWITCH SET

mm	: 0,83,0
	: ARF 12.0

# CONTROL LEVER POSITION SET

Control lever	
position YA mm	: 27,831,8

Control lever	
position YB mm	: 74,085,0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.10.93 : ISO 4113 Test oil

: 0 460 494 279 Part no. Pump designation : VE4/9F2300R426

Customer-spec. information Customer : PSA

: XUD 9/Y-N2 (1.9L Motor

## TEST BENCH REQUIREMENTS

Overflow

restriction mm : 0.55

Iniet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar +:

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

## REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 0,3 Tolerance mm +:+0.02

Outlet : B

### INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm 4.2 Tolerance mm +-: 0.2 Shutoff solenoid Volt 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250 Supply pomp pressure bar 5.2 Tolerance bar + : 0.3 Shutoff solenoid Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 28.5 Tolerance cm3/1000 str. + : 0.5Spread cm3/1000 strokes : 2.0 Shutoff solenoid Volt 12

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550 Del. quantity cm3/1000 strokes : 3.0 Tolerance cm3/1000 str. +-: 0.5 Shutoff solenoid Volt 12

## IDLE DELIVERY

Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. +-: 1.0 Spread cm3/1000 strokes : 2.0 Shutoff solenoid 12 Volt

HIGH IDLE SETTING

Rated speed rpm : 470	+	Shutoff solenoid	
Del. quantity	1	Volt :	12
cm3/1000 strokes : 8.0	1	·	
Tolerance	1		
cm3/1000 str. +-: 1.0	n I	INJECTION-PUMP TEST	* PD-TOTETONE
Shutoff solenoid	΄ Τ	TIANECTIONA-LONG 1621	SPECIFICATIONS
	, †		
Volt : 12	<del>·</del> †	TIMING DEVICE CHARA	CIERISTIC
	+		
FULL-LOAD SPEED REGULATION	+	Rated speed rpm :	2000
	+		
Rated speed rpm : 2440	+	SV travel mm :	8.0
Del. quantity	+	Tolerance mm +-:	0.4
cm3/1000 strokes : 23.0	) 1	Check	
Tolerance	1	tolerance mm +-:	0.7
cm3/1000 str. +: 2.0	n 1	Shutoff solenoid	0.1
Shutoff solenoid	1		12
	, T	Volt :	12
Volt : 12	·	Datad annual mas	000
OTABITAIN FUEL BELTWENN	Ť	Rated speed rpm :	800
STARTING FUEL DELIVERY	†		
	+	SV travel mm :	1.9
Rated speed rpm : 100	+	Tolerance nm + :	0.4
Del. quantity	+	Check	
cm3/1000 strokes : 59.0	) +	tolerance mm +-:	0.7
Tolerance	1	Shutoff solenoid	
cm3/1000 str. + : 15.0	) 1	Volt :	12
Shutoff solenoid			12
Volt : 12		SUPPLY PUMP PRESSUR	E CHARACTERICTIC
, 12	Τ .	SUPPLY FUMP PRESSUR	E CHARACIERISIIC
	Ť	Section 1	2052
	†	Rated speed rpm :	2250
	<b>.</b>	Supply pomp	
LOAD-DEPENDENT START OF DELI	[VERY +	pressure bar :	7.9
SETTING	+	Tolerance bar + :	0.3
	+	Shutoff solenoid	
DELIVERY DIFFERENCE	1	Volt :	12
	1		
Rated speed rpm : 1250	1	Rated speed rpm :	500
Del. quantity	I	Supply pomp	300
	7		7.4
	' †	pressure bar :	
Tolerance	, †	Tolerance bar +-:	0.3
cm3/1000 str. + : 1.0	<b>/</b>	Shutoff solenoid	
Shutoff solenoid	+	Volt :	12
Volt : 12	<del>!</del>		
	+	OVERFLOW QUANTITY	
PRESSURE DIFFERENCE	+		
	+	Rated speed rpm :	2250
Rated speed rpm : 1250	1	Overflow quantity	
Del. quantity	1	ccm/10s :	97.2
cm3/1000 strokes : -0.2	· 1	Tolerance	// · L
Tolerance	· T	ccm/10s +-:	41.6
	T	com/rus +=:	41.0
cm3/1000 str. + : 0.1	†		
Shutoff solenoid	. +	Check tolerance	
Volt : 12	: †	ccm/10s +:	55.5
	+	Shutoff solenoid	
TIMING-DEVICE TRAVEL DIFFERE	NCE +	Volt :	12
	+		
Rated speed rpm : 1250	1	Rated speed rpm :	500
Del. quantity	1	Overflow quantity	
cm3/1000 strokes : -0.8	<b>1</b>	ccm/10s quarterty	62.5
Tolerance	T	Tolerance	UE. J
	Ť		20.9
cm3/1000 str. + : 0.1	+	ccm/10s +-:	20.8

	4	Talanana
Check tolerance	Ť	Tolerance cm3/1000 str. +-: 0.5
	34.7	Check tolerance
Shutoff solenoid	I	cm3/1000s. +-: 2.2
Volt :	12 I	Shutoff solenoid
•	T I	Volt : 12
DELIVERY AND BREAKAWAY	CHARACTERISTIC	vott : 12
Rated speed rpm : 24	440	
Del, quantity	I	ELECTR. SHUTOFF
cm3/1000 strokes :	27.0	
Tolerance	23.0	CONTROL LEVER, IDLE STOP
cm3/1000 str. +-:	2.0	Detect enced and 275
Check tolerance	2.0	Rated speed rpm : 375
cm3/1000s. +:	4.0	Del. quantity
	4.0	cm3/1000 strokes : 1.5
Shutoff solenoid	43	Tolerance
Volt :	12	cm3/1000 str. +-: 1.5
Ontail and I	+	Check tolerance
	540 +	cm3/1000s. +-: 1.5
Del. quantity	+	
cm3/1000 strokes :	15.0	
Check tolerance	+	
cm3/1000s. +:	5.0	
Shutoff solenoid	+	
Volt :	12 +	
	+	
	750 +	CHECKING LOAD-DEPENDENT
Del. quantity	+	START OF DELIVERY
cm3/1000 strokes :	3.0	
Tolerance	+	DELIVERY DIFFERENCE
cm3/1000 str. +-:	3.0 +	
Check tolerance	+	Rated speed rpm : 1250
cm3/1000s. +-:	3.0	Del. quantity
Shutoff solenoid	+	cm3/1000 strokes : -8.0
Volt :	12	Tolerance
	+	cm3/1000 str. +-: 2.0
	250 +	Check tolerance
Del. quantity	+	cm3/10@0s. +-: 5.0
cm3/1000 strokes :	31.0	Shutoff solenoid
Tolerance	+	Volt : 12
cm3/1000 str. +-:	1.0	
Check tolerance	<u> </u>	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000s. +-:	2.2	
Shutoff solenoid	1	Rated speed rpm : 1250
Volt :	12	Del. quantity
	1	cm3/1000 strokes : -0.8
Rated speed rpm : 5	500	Tolerance
Del. quantity	<u> </u>	cm3/1000 str. +-: 0.1
	30.0	Check tolerance
Tolerance	1	cm3/1000s. +-: 0.1
cm3/1000 str. +-:	1.5	Shutoff solenoid
Check tolerance	1	Volt : 12
cm3/1000s. +-:	3.0	. 16
Shutoff solenoid	I	DELIVERY DIFFERENCE
Volt :	12	APPRAINT NOT FUFIARE
	I	Rated speed rpm : 1250
Rated speed rpm : 12	250 I	Del. quantity
Del. quantity	.50	cm3/1000 strokes : 5.0
	28.5	Tolerance
ciis/ lood strokes :	<b>20.</b> 3	
	+	cm3/1000 str. +-: 3.0

Check tolerance cm3/1000s. +- Shutoff solenoid Volt	•	3.0 12	
PRESSURE DIFFERENCE	CE		
Rated speed rpm Supply pomp pressure bar Tolerance bar +- Shutoff solenoid Volt	•	1250 -6.8 0.2 12	
TIMING-DEVICE TRAV	/EL 1	DIFFERENCE	
Rated speed rpm Tolerance mm +- Check	:	1250 0.2	
tolerance mm +- Shutoff solenoid	:	0.6	
Volt	:	12	
EXHAUST-GAS RECIRC	CULA	TION	
Rated speed rpm	:	1125	
Del. quantity cm3/1000 strokes	:	18.0	
Tolerance cm3/1000 str. +-	:	1.0	
Check tolerance cm3/1000s. +	:	4.0	
Shutoff solenoid Volt	:	12	
Del. quantity cm3/1000 strokes	:	10.8	
START TRANSITION			
Rated speed rpm Del. quantity	:	350	
cm3/1000 strokes Tolerance	:	25.0	
cm3/1000 str. +- Shutoff solenoid	:	10.0	
Volt	:	12	
Rated speed rpm	:	225	
Del. quantity cm3/1000 strokes Tolerance	:	63.0	
cm3/1000 str. +- Shutoff solenoid	:	17.0	
Volt	:	12	

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm 3,3
Tolerance mm + 3,3
Tolerance mm + 5,8
Tolerance mm + 2 + 0,2
Dimension MS mm : 1,4
Tolerance mm + 2 + 0,2

MICROSWITCH

SET

mm : 1=ARF 8,0 : 2=ARF 10,8

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 18,8..22,8

Control lever

position YB mm : 82,0..96.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.01.94 Test oil : ISO 4113

: 0 460 494 342 Part no. Pump designation: VE4/9F2250R445-2

Customer-spec. information Customer : PSA

: XUD 9 TE-L, TF-L Motor

#### TEST BENCH REQUIREMENTS

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar +:

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm 450

#### REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 0,3 Tolerance mm +-:+-0.02Outlet

### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250 Aneroid pressure

1000

Setting mm 3.6 Tolerance mm + : 0.2

Shutoff solenoid

Volt 12

### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Aneroid pressure

hPa 1000 Supply pomp

pressure bar 5.6 Tolerance bar +-: 0.3

Shutoff solenoid

Volt 12

### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250

Aneroid pressure

hPa 1000

Del. quantity

cm3/1000 strokes : 54.0

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes : 2.0

Check tolerance

cm3/1000s. 3.0

Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 37.0

Tolerance

cm3/1000 str. +-:

Shutoff solenoid

Volt 12

Check tolerance

cm3/1000s. 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490

Del. quantity		+			
cm3/1000 strokes	: 8.5	1			
Tolerance	. 0.5	T LOAD DESCRIPTION	NIT 07107	05 051 714504	
	0.5		MI START	OF DELIVERY	
cm3/1000 str. +-	: 0.5	+ SETTING			
Shutoff solenoid		+			
Volt	: 12	→ DELIVERY DIF	FERENCE		
		1	7 21121102		
IDLE DELIVERY		Dotad aread	-	4250	
TOCE DELIVER!		+ Rated speed		1250	
		+ Del. quantit			
Rated speed rpm	: 440	+ cm3/1000 str	okes :	-10.0	
Del. quantity		+ Tolerance			
cm3/1000 strokes	: 16.0	+ cm3/1000 str	. +- •	1.0	
Tolerance		+ Shutoff sole		,	
cm3/1000 str. +-	: 1.0	+ Volt	HOIU	12	
	. 1.0	T voic	•	12	
Spiread		<b>†</b>			
cm3/1000 strokes	: 2.0	+ PRESSURE DIF	FERENCE		
Shutoff solenoid		+			
Volt	: 12	+ Rated speed	rom :	1250	
		+ Del. quantit		1000	
HIGH IDLE SETTING		+ cm3/1000 str		0.2	
LITCH TOLE SELLING			okes :	-0.2	
	4.00	+ Tolerance			
Rated speed rpm	: 490	+ cm3/1000 str		0.1	
Del. quantity		+ Shutoff sole	enoid		
cm3/1000 strokes	: 16.0	+ Volt	•	12	
Tolerance		1	•	`-	
cm3/1000 str. +-	: 1.0	TIMING_NEVIA	TOAUEL	NECESSERVE	
	. 1.0	+ TIMING-DEVIC	E TRAVEL	DITLEMENTE	
Shutoff solenoid	4.0	†			
Volt	: 12	+ Rated speed		1250	
		+ Del. quantit	:y		
FULL-LOAD SPEED RE	EGULATION	+ cm3/1000 str		-1.0	
		+ Tolerance		1	
Dated aread man	: 2575			0.4	
Rated speed rpm		+ cm3/1000 str		0.1	
Pressure hPa	: 1000	+ Shutoff sole	enoid		
Del. quantity		+ Volt	:	12	
cm3/1000 strokes	: 14.0	+			
Tolerance					
cm3/1000 str. +-	: 2.0	I TALLECTTOAL DI	MD TEST	SPECIFICATION	c
Shutoff solenoid	. 2.0	T 1102011014-F0	ML 1E31	SECTETALION	S
	40	T			
Volt	: 12	+ TIMING DEVIC	E CHARAC	TERISTIC	
		+			
STARTING FUEL DELI	IVERY	+ Rated speed	rom :	2000	
		+ Anaroid pres			
Rated speed rpm	: 150	+ hPa		1000	
Del. quantity		1 ""	•	1000	
om7/1000 strates	. 50.0	T		, +	
cm3/1000 strokes	: 52.0	+ SV travel mm		6.5	
Tolerance		† Tolerance ma	1 +-:	0.4	
cm3/1000 str. +-	: 15.0	+ Check			
Shutoff solenoid		+ tolerance mm	· +- :	0.7	
Volt	: 12	+ Shutoff sole			
	•	+ Volt		12	
SET CRANILATED STAT	TTNC NELTHERY	T vocc	•	12	
SET GRADUATED STAF		Ť			
CONTROL LEVER, IDL	LE STOP	+ Rated speed		750	
		+ Aneroid pres	sure		
Rated speed rpm	: 200	→ hPa	:	1000	
Del. quantity		1	•		
cm3/1000 strokes	: 53.0	1 CV topical an		1.5	
	. 23.0	+ SV travel mm			
Tolerance		† Tolerance mm	· +- :	0.4	
cm3/1000 str. +-	: 3.0	+ Check			
Shutoff solenoid		+ tolerance mm	· +-:	0.7	
Volt	: 12	+	-	= *	
		ľ			

Shutoff solenoid Volt	:	12	‡	Check tolerance cm3/1000s. +-	•	4.0
SUPPLY PUMP PRESSI	וטב ניוו	. –	+	Shutoff solenoid		12
			Ŧ	Volt	•	
Rated speed rpm Aneroid pressure	: 20	000	‡	Rated speed rpm Aneroid pressure	:	2375
hPa	:	1000	+	hPa	:	1000
Supply pomp pressure bar	:	7.5	‡	Del. quantity cm3/1000 strokes	:	39.0
Tolerance bar +- Shutoff solenoid	:	0.3	<u>†</u>	Tolerance cm3/1000 str. +-		5.0
Volt	:	12	+	Check tolerance	•	
Rated speed rpm	: 7	<b>'</b> 50'	‡	cm3/1000s. +- Shutoff solenoid	:	6.0
Aneroid pressure hPa	•	1000	†	Volt	:	12
Supply pomp	•		Ŧ	Rated speed rpm	:	2750
pressure bar Tolerance bar +-	:	4.3 0.3	‡	Aneroid pressure	•	1000
Shutoff solenoid			+	Del. quantity	•	
Volt	•	12	‡	cm3/1000 strokes Tolerance	:	3.0
OVERFLOW QUANTITY			<u>†</u>	cm3/1000 str. +- Check tolerance	:	3.0
Rated speed rpm	: 21	150	Ŧ	cm3/1000s. +-	:	3.0
Aneroid pressure hPa	:	1000	‡	Shutoff solenoid Volt	:	12
Overflow quantity ccm/10s		97.2	+ -			
Tolerance	•		Ţ	Rated speed rpm Aneroid pressure	:	750
ccm/10s +-	•	41.6	İ	hPa Del. quantity	:	350
Check tolerance			Ŧ	cm3/1000 strokes	:	46.0
ccm/10s + Shutoff solenoid	•	41.6	‡	Tolerance cm3/1000 str. +-	:	0.5
Volt	•	12	+	Check tolerance cm3/1000s. +-		3.0
Rated speed rpm	: 5	500	Ŧ	Shutoff solenoid	•	
Aneroid pressure hPa	:	1000	‡	Volt	:	12
Overflow quantity ccm/10s		62.5	+	Rated speed rpm Aneroid pressure	:	2150
Tolerance			Ţ	hPa	:	1000
ccm/10s +-	:	20.8	‡	Del. quantity cm3/1000 strokes	•	50.1
Check tolerance		20.0	+	Tolerance		
ccm/10s +- Shutoff solenoid	•	20.8	‡	cm3/1000 str. +- Check tolerance	:	1.0
Volt	:	12	Ì	cm3/1000S. +- Shutoff solenoid	:	2.2
DELIVERY AND BREAK	AWAY C	CHARACTERISTIC	Ŧ	Volt	:	12
Rated speed rpm	: 25	75	‡	Rated speed rpm	;	2000
Aneroid pressure hPa	•	1000	Ì	Aneroid pressure hPa		1000
Del. quantity			Ŧ	Del. quantity	•	
cm3/1000 strokes Tolerance	:	14.0	‡	cm3/1000 strokes Tolerance	:	52.0
cm3/1000 str. +-	:	2.0	+	cm3/1000 str. +-	:	1.0

Check tolerance + cm3/1000s. + : 2.2 +	
Shutoff solenoid + Volt : 12	CHECKING LOAD-DEPENDENT
+	START OF DELIVERY
Rated speed rpm : 500 + Aneroid pressure +	DELIVERY DIFFERENCE
hPa : 1000 + Del. quantity +	Rated speed rpm : 1250 Del. quantity
cm3/1000 strokes : 48.3	cm3/1000 strokes : -13.0 Tolerance
cm3/1000 str. + : 1.5 Check tolerance	cm3/1000 str. +-: 2.0 Check tolerance
cm3/1000s. +: 3.0 +	cm3/1000s. +-: 5.0 Shutoff solenoid
Volt : 12	Volt : 12
Rated speed rpm : 1250 Aneroid pressure	TIMING-DEVICE TRAVEL DIFFERENCE
hPa : 1000 + Del. quantity	Rated speed rpm : 1250 Del. quantity
cm3/1000 strokes : 54.0	cm3/1000 strokes : -1.0 Tolerance
cm3/1000 str. +: 0.5 Check tolerance	cm3/1000 str. +-: 0.1 Check tolerance
cm3/1000s. + : 2.2 + Shutoff solenoid	cm3/1000s. +-: 0.1 Shutoff solenoid
Volt : 12	Volt : 12
MECHANICAL SHUTOFF	DELIVERY DIFFERENCE
Rated speed rpm : 2000 +	Rated speed rpm : 1250 Del. quantity
Aneroid pressure + 1000 +	cm3/1000 strokes : 5.0 Tolerance
Del. quantity cm3/1000 strokes : 1.5	cm3/1000 str. → : 3.0 Check tolerance
Tolerance + : 1.5	cm3/1000s. +-: 3.0 Shutoff solenoid
Check tolerance cm3/1000s. +: 1.5	Volt : 12
Shutoff solenoid Volt : 12	PRESSURE DIFFERENCE
	Rated speed rpm : 1250 Supply pomp
ELECTR. SHUTOFF	pressure bar : -1.1 Tolerance bar +-: 0.2
CONTROL LEVER, IDLE STOP	Shutoff solenoid
Rated speed rpm : 400 + Del. quantity	. Yolt : 12
cm3/1000 strokes : 1.5 Tolerance	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 str. $\leftarrow$ : 1.5 + Check tolerance	Rated speed rpm : 1250 Tolerance mm +-: 0.2
cm3/1000s. +: 1.5	Check tolerance mm +-: 0.7
‡	Shutoff solenoid Volt : 12

## START TRANSITION

Rated speed rpm : 380

Del. quantity cm3/1000 strokes : 35.0

Tolerance

cm3/1000 str. +: 10.0

Shutoff solenoid

12 Volt

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm +: +-0,1 Dimension KF mm : 6,0
Tolerance mm + : +0,2
Dimension MS mm : 1,3
Tolerance mm + : +0,2

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.06.94 Test oil : ISO 4113

: 0 460 494 370 Part no. Pump designation : VE4/9F2250R445-3

Customer-spec. information

Customer : PSA

: XUD 9 TE-L; P.306 Motor

#### TEST BENCH REQUIREMENTS

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar  $\leftarrow$ : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar Tolerance bar +-:

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

### REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 0,3 Tolerance mm + : +-0,02 : A Outlet |

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Aneroid pressure

hPa 1000

Setting mm 4.1 Tolerance mm + : 0.2 Shutoff solenoid

Volt 12

## SUPPLY PUMP PRESSURE

Rated speed rpm 1500

Aneroid pressure

nPa. 1000

Supply pomp

pressure bar 5.7 Tolerance bar +-: 0.3

Shutoff solenoid

Volt 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250

Aneroid pressure

hPa 1000 Del. quantity

cm3/1000 strokes : 54.5 Tolerance

cm3/1000 str. + :0.5

Spread

cm3/1000 strokes : 2.0

Check tolerance cm3/1000s.

3.0

Shutoff solenoid

Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 37.0

Tolerance

cm3/1000 str. + :0.5

Shutoff solenoid

Volt 12

Check tolerance cm3/1000s. 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490

Del. quantity		+
cm3/1000 strokes	: 8.5	$\perp$
Tolerance	. 0.9	1
cm3/1000 str. +-	: 0.5	T
	. 0.5	TALIFORTON DUMP TROP CONTESTANTON
Shutoff solenoid	40	+ INJECTION-PUMP TEST SPECIFICATIONS
Volt	: 12	† <u> </u>
		+ TIMING DEVICE CHARACTERISTIC
IDLE DELIVERY		+
		+ Rated speed rpm : 2000
Rated speed rpm	: 440	+ Aneroid pressure
Del. quantity		+ hPa : 1000
cm3/1000 strokes	: 16.0	1000
Tolerance	. 10.0	T SV Amount and
	. 4.0	+ SV travel mm : 6.5
cm3/1000 str. +-	: 1.0	+ Tolerance mm +-: 0.4
Spread		† Check
cm3/1000 strokes	: 2.0	tolerance mm +-: 0.7
Shutoff solenoid		+ Shutoff solenoid
Volt	: 12	+ Volt : 12
		1
HIGH IDLE SETTING		Rated speed rpm : 900
		Aneroid pressure
Rated speed rpm	: 490	+ hPa : 1000
Del. quantity	. 490	T 11F8 : 1000
	. 4(0	1 00 4 1
cm3/1000 strokes	: 16.0	+ SV travel mm : 1.2
Tolerance		† Tolerance mm +-: 0.4
cm3/1000 str. +-	: 1.0	+ Check
Shutoff solenoid		+ tolerance mm + : 0.7
Volt	: 12	+ Shutoff solenoid
		+ Volt : 12
FULL-LOAD SPEED REG	SULATION	
· · · · · · · · · · · · · · · · · · ·	300/112017	SUPPLY PUMP PRESSURE CHARACTERISTIC
Rated speed rpm	: 2575	T SOFICE FOR PRESSURE CHARACTERISTIC
		Poted and the 2000
	: 1000	+ Rated speed rpm : 2000
Del. quantity		+ Aneroid pressure
cm3/1000 strokes	: 14.0	+ hPa : 1000
Tolerance		+ Supply pomp
cm3/1000 str. +-:	: 2.0	+ pressure bar : 6.8
Shutoff solenoid		+ Tolerance bar + : 0.3
Volt	. 40	
VOCE .	12	→ Shutoff solenoid
VOCC	: 12	+ Shutoff solenoid + Volt • 12
		+ Shutoff solenoid + Volt : 12
STARTING FUEL DELIN		+ Volt : 12
STARTING FUEL DELIV	VERY	+ Volt : 12 + Rated speed rpm : 900
STARTING FUEL DELIV		+ Volt : 12 + Rated speed rpm : 900 + Aneroid pressure
STARTING FUEL DELIVERATED SPEED SPEED STARTING FUEL DELIVERS	VERY: 150	- Volt : 12 - Rated speed rpm : 900 - Aneroid pressure - hPa : 1000
STARTING FUEL DELIVERATED SPEED Rated speed rpm Del. quantity cm3/1000 strokes	VERY: 150	- Volt : 12 - Rated speed rpm : 900 - Aneroid pressure - hPa : 1000 - Supply pomp
STARTING FUEL DELIV Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	VERY : 150 : 52.0	- Volt : 12 Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2
STARTING FUEL DELIVERATED SPEEL QUANTITY Cm3/1000 strokes Tolerance cm3/1000 str. +-:	VERY : 150 : 52.0	Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2 Tolerance bar + : 0.3
STARTING FUEL DELIV Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	VERY : 150 : 52.0	- Volt : 12 Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2
STARTING FUEL DELIVERATED SPEED FOR STARTING FUEL DELIVERATED SPEED FOR STARTING FUEL DELIVERATED SPEED FUEL DELIVERATED FUEL FUEL FUEL FUEL FUEL FUEL FUEL FUEL	VERY : 150 : 52.0 : 15.0	Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid
STARTING FUEL DELIVERATED SPEED FOR STARTING FUEL DELIVERATED SPEED FOR STARTING FUEL DELIVERATED SPEED FUEL DELIVERATED FUEL FUEL FUEL FUEL FUEL FUEL FUEL FUEL	VERY : 150 : 52.0	Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2 Tolerance bar + : 0.3
STARTING FUEL DELIVERATED SPEED FOR STARTING FUEL DELIVERATED SPEED FOR STARTING FUEL DELIVERATED SPEED FUEL DELIVERATED FUEL FUEL FUEL FUEL FUEL FUEL FUEL FUEL	VERY: 150: 52.0: 15.0: 12	Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12
STARTING FUEL DELIVERATED Speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- : Shutoff solenoid Volt  SET GRADUATED START	VERY: 150: 52.0: 15.0: 12 TING DELIVERY	Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid
STARTING FUEL DELIVERATED SPEED FOR STARTING FUEL DELIVERATED SPEED FOR STARTING FUEL DELIVERATED SPEED FUEL DELIVERATED FUEL FUEL FUEL FUEL FUEL FUEL FUEL FUEL	VERY: 150: 52.0: 15.0: 12 TING DELIVERY	Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY
STARTING FUEL DELIVERATED SPEEL QUANTITY CM3/1000 strokes Tolerance Cm3/1000 str. +- Shutoff solenoid Volt  SET GRADUATED START CONTROL LEVER, IDLE	VERY: 150: 52.0: 15.0: 12: TING DELIVERY	Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2150
STARTING FUEL DELIVERATED SPEEL QUANTITY CM3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  SET GRADUATED START CONTROL LEVER, IDLE	VERY: 150: 52.0: 15.0: 12 TING DELIVERY	Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2150 Aneroid pressure
STARTING FUEL DELIVERATED SPEEL QUANTITY CM3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  SET GRADUATED START CONTROL LEVER, IDLE Rated speed rpm Del. quantity	VERY : 150 : 52.0 : 15.0 : 12 TING DELIVERY E STOP : 200	Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2150 Aneroid pressure hPa : 1000
STARTING FUEL DELIVERATED SPEEL QUANTITY CM3/1000 strokes Tolerance cm3/1000 str. +-: Shutoff solenoid Volt  SET GRADUATED START CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes	VERY : 150 : 52.0 : 15.0 : 12 TING DELIVERY E STOP : 200	Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2150 Aneroid pressure hPa : 1000 Overflow quantity
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-: Shutoff solenoid Volt  SET GRADUATED START CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	VERY : 150 : 52.0 : 15.0 : 12 TING DELIVERY E STOP : 200 : 53.0	Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2150 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 97.2
STARTING FUEL DELIVERATED SPEEL QUANTITY CM3/1000 strokes Tolerance cm3/1000 str. +-: Shutoff solenoid Volt  SET GRADUATED START CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes	VERY : 150 : 52.0 : 15.0 : 12 TING DELIVERY E STOP : 200 : 53.0	Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2150 Aneroid pressure hPa : 1000 Overflow quantity
STARTING FUEL DELIVERATED SPEEL QUANTITY CM3/1000 strokes Tolerance cm3/1000 str. +-: Shutoff solenoid Volt  SET GRADUATED START CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-:	VERY : 150 : 52.0 : 15.0 : 12 TING DELIVERY E STOP : 200 : 53.0	Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2150 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 97.2 Tolerance
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-: Shutoff solenoid Volt  SET GRADUATED START CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	VERY : 150 : 52.0 : 15.0 : 12 TING DELIVERY E STOP : 200 : 53.0	Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  OVERFLOW QUANTITY  Rated speed rpm : 2150 Aneroid pressure hPa : 1000 Overflow quantity ccm/10s : 97.2 Tolerance

Chaol, talamana		•	+ Aneroid pressure	750
Check tolerance ccm/10s +-	: 41.6		+ hPa →	: 350
Shutoff solenoid			LDA/	
Volt	: 12	•	+ HBA stroke mm	: 5,9
Rated speed rpm	: 500	•	Del. quantity cm3/1000 strokes	: 46.0
Aneroid pressure		-	Tolerance	. 40.0
hPa	: 1000	-	cm3/1000 str. +-	: 0.5
Overflow quantity ccm/10s	: 62.5		+ Check tolerance + cm3/1000s. +-	: 3.0
Tolerance		-	Shutoff solenoid	. 5.0
ccm/10s +-	: 20.8	•	Volt	: 12
Check tolerance		•	T Rated speed rpm	: 2150
ccm/10s +	: 20.8		Aneroid pressure	. 2130
Shutoff solenoid	: 12	•	+ hPa	: 1000
Volt	: 12	•	Del. quantity cm3/1000 strokes	: 50.1
DELIVERY AND BREAK	KAWAY CHARAC	CTERISTIC -	Tolerance	. 50.7
Debad amond was	. วิธิวิธิ	•	cm3/1000 str. +-	: 1.0
Rated speed rpm Aneroid pressure	: 2575	•	Check tolerance cm3/1000s. +-	: 2.2
hPa	: 1000		Shutoff solenoid	
Del. quantity cm3/1000 strokes	. 1/ 0	-	Volt	: 12
Tolerance	: 14.0	-	Rated speed rpm	: 2000
cm3/1000 str. +	: 2.0	-	Aneroid pressure	
Check tolerance cm3/1000s. +-	: 4.0	-	hPa	: 1000
Shutoff solenoid	4.0	-	Del. quantity cm3/1000 strokes	: 52.0
Volt	: 12	-	Tolerance	
Rated speed rpm	: 2375	-	cm3/1000 str. +-	: 1.0
Aneroid pressure	: 2375		Check tolerance cm3/1000s. +-	: 2.2
hPa	: 1000	-	Shutoff solenoid	
Del. quantity cm3/1000 strokes	: 39.0	•	Volt	: 12
Tolerance	. 39.0		Rated speed rpm	: 500
cm3/1000 str. +-	: 5.0	-	Aneroid pressure	
Check tolerance cm3/1000s. +-	: 6.0	•	hPa Del. quantity	: 1000
Shutoff solenoid	. 0.0	-	cm3/1000 strokes	: 48.3
Volt	: 12	•	Tolerance	<b>4</b>
Rated speed rpm	: 2750	_	cm3/1000 str. +- Check tolerance	: 1.5
Aneroid pressure		-	cm3/1000s. +-	: 3.0
hPa	: 1000	-	Shutoff solenoid	40
Del. quantity cm3/1000 strokes	: 3.0	7	Volt	: 12
Tolerance		-	Rated speed rpm	: 1250
cm3/1000 str. +-	: 3.0	-	Aneroid pressure	1000
Check tolerance cm3/1000s. +	: 3.0	-	hPa Del. quantity	: 1000
Shutoff solenoid		-	cm3/1000 strokes	: 54.5
Volt	: 12	-	Tolerance cm3/1000 str. +-	: 0.5
Rated speed rpm	: 750	1	Check tolerance	. 0.5
- <b>-</b>	_	_	cm3/1000s. +-	: 2.2
		_	+	

Shutoff solenoid Volt	:	12	
MECHANICAL SHUTOS	F		
Rated speed rpm Aneroid pressure	:	2000	
hPa	:	1000	
Del. quantity cm3/1000 strokes	:	1.5	
	:	1.5	
Check tolerance cm3/1000s. +-	:	1.5	
Shutoff solenoid Volt	:	12	
ELECTR. SHUTOFF			
CONTROL LEVER, ID	LE :	STOP	
Rated speed rpm Del. quantity	:	400	
cm3/1000 strokes	:	1.5	
Tolerance cm3/1000 str. +	:	1.5	
Check tolerance cm3/1000s. +-	:	1.5	
FULL-LOAD STOP CO	NTRO	DL LEVER	
Rated speed rpm	:	400	
Del. quantity cm3/1000 strokes	:	1.5	
Tolerance cm3/1000 str. +	:	1.5	
Check tolerance cm3/1000s. +	:	1.5	
START TRANSITION			
		780	
Rated speed rpm Del. quantity	:	380	
cm3/1000 strokes Tolerance	:	35.0	
cm3/1000 str. +- Shutoff solenoid	•	10.0	
Volt	:	12	

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/ HBA stroke mm : 5,9 Dimension K mm : 3,3 Tolerance mm + : +-0,1 Dimension KF mm : 6,0 Tolerance mm + : +-0,2 Dimension MS mm : 1,3 Tolerance mm +- : +-0,2	9
CONTROL LEVER POSITION SET	

Control lever position YA mm : 28,8..32,8

Control lever position YB mm

: 68,0..82,0

Calibrating-oil return temperature *C : 45 Tolerance *C +: 1  Overflow restriction mm : 0.55  Inlet press. bar : 0.35 Tolerance bar +: 0.05  Copening pressure bar : 130 Tolerance bar +: 3  Tolerance cam3/1000 strckes : 37.0  Tolerance cam3/1000 strckes : 37.0  Tolerance cam3/1000 strckes : 37.0  Tolerance cam3/1000 strckes : 37.0  Tolerance cam3/1000 strckes : 37.0  Tolerance cam3/1000 strckes : 37.0  Tolerance cam3/1000 strckes : 37.0  Tolerance cam3/1000 strckes : 37.0  Tolerance cam3/1000s trckes : 37.0  Tolerance cam		+
Note remarks	BOSCH INJ. PUMP TEST SPECIFICATIONS	Rated speed rpm : 1500
Refer to Service Info for test and adjustment instructions.   See microcard(s) W400/   Shutoff solenoid   12   12   12   13   14   15   15   15   15   15   15   15	Nicks remarks	
Tolerance mm + : 0.2	Note remarks	† nPa : 1000
Tolerance mm + : 0.2	Refer to Service Info for test and	F Setting mm : 41
Semicrocard(s)   W400/   Shutoff solenoid   12		+ Tolerance mm + : 0.2
Edition : 28.09.95 Test oil : ISO 4113  Part no. : 0 460 494 388 Pump designation : VE4/9F2250R445-4  Customer—spec. information Customer : PSA Motor : XUD 9 TE-L;P.306  Calibrating—oil return temperature *C : 45 Tolerance *C + : 1  Overflow restriction nm : 0.55  Inlet press. bar : 0.35 Tolerance bar + : 0.05  Inlet press. bar : 0.35 Tolerance bar + : 0.05  Tost nozzle holde assembly : 1 688 901 022  Opening pressure bar : 130 Opening pressure bar : 130 Outside diameter : 6.00  x inside diameter : 2.00 x length mm : 450  INJECTION PUMP SETTING VALUES  INJECTION PUMP SETTING VALUES  Insection in the strict of t		
Edition		
Part no. : 0 460 494 388 Pump designation : VE4/9F2250R445-4 Pump designation : 120 Pupp somp Pup ressure bar : 5.7 Publ-Load Delivery WITH BOOST PRESS Pump designation : 120 Publ-Quantity com3/1000 strokes : 2.0 Publ-Quantity com3/1000 strokes : 37.0 Publ-Quantity com3/1000 strokes : 37.0 Publ-Quantity com3/1000 strokes : 37.0 Publ-Quantity com3/1000 strokes : 37.0 Publ-Quantity com3/1000 strokes : 37.0 Publ-Quantity com3/1000 strokes : 3.0 Publ-Quantity com3/1000 strokes : 3.0 Publ-Quantity com3/1000 strokes : 8.5 Publ-Qua	Edition : 28.09.95	+
Pump designation : VE4/9F2250R445-4	Test oil : ISO 4113	SUPPLY PUMP FRESSURE
Pump designation : VE4/9F2250R445-4	Part no. • 0 460 494 388	Pated speed rpm · 1500
hPa	Pumn designation : VEA/9E2250RAA5-A	
Customer—spec. information         pressure bar         5.7           Customer         : PSA         Tolerance bar         + : 0.3           Motor         : XUD 9 TE-L;P.306         Shutoff solenoid Volt         : 12           TEST BENCH REQUIREMENTS         FULL-LOAD DELIVERY WITH BOOST PRESS.           Calibrating-oil return         Rated speed rpm         : 1250           Aneroid pressure hPa         : 1000           Del. quantity         cm3/1000 strokes         : 54.5           Tolerance *C         : 1         Del. quantity         cm3/1000 strokes         : 54.5           Tolerance bar         : 0.55         Spread cm3/1000 strokes         : 2.0         Check tolerance cm3/1000 strokes         : 2.0           Tost nozzle holde assembly         : 1 688 901 022         FULL-LOAD DELIV. WITHOUT BOOST PRESS           Opening pressure bar         : 1 688 901 022         FULL-LOAD DELIV. WITHOUT BOOST PRESS           Rated speed rpm         : 500           Del. quantity         cm3/1000 strokes         : 37.0           Tolerance cm3/1000 strokes         : 37.0           Tolerance cm3/1000 strokes         : 37.0           Tolerance cm3/1000 strokes         : 3.0<	Tump designation . Tear / Personal a	L hpa · 1000
Customer—spec. information         pressure bar         5.7           Customer         : PSA           Motor         : XUD 9 TE—L;P.306         Tolerance bar         : 0.3           Shutoff solenoid         volt         : 12           TEST BENCH REQUIREMENTS         FULL—LOAD DELIVERY WITH BOOST PRESSU           Calibrating—oil return         Rated speed rpm         : 1250           Aneroid pressure hPa         : 1000         Del. quantity           Consolid pressure         hPa         : 1000           Deel quantity         cm3/1000 strokes         : 54.5           Tolerance bar         : 0.5         Spread           Consolid pressure         cm3/1000 strokes         : 2.0           Check tolerance         cm3/1000 strokes         : 2.0           Check tolerance         cm3/1000 strokes         : 3.0           Shutoff solenoid         Volt         : 12           Tost nozzle holde         : 1688 901 022         FULL—LOAD DELIV. WITHOUT BOOST PRESS           Opening pressure         Barted speed rpm         : 500           Del. quantity         cm3/1000 strokes         : 37.0           Tolerance bar         : 1 680 750 073         Tolerance         cm3/1000 strokes         : 37.0           Tolerance bar<		T TITE . 1000
Motor	Customer-spec. information	nressure har 5 7
Motor	Customer . PSA	Tolerance har + 0 3
Volt	Motor : XUD 9 TE-1 -P 306	Shutoff solenoid
TEST BENCH REQUIREMENTS  Calibrating—oil return temperature *C : 45 Tolerance *C +: 1  Overflow restriction mm : 0.55  Inlet press. bar : 0.35 Tolerance bar +: 0.05  Opening pressure bar : 130 Del. quantity cm3/1000 strokes : 2.0 Check tolerance bar : 130 Tolerance bar +: 3  Tolerance bar +: 3  Tolerance bar -: 3  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 3.0  **REMARKS**  REMARKS*  REMARKS*  Residual speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 0.5	. 1000 / 12 2/1:300	
Calibrating-oil return  temperature °C : 45 Tolerance °C +: 1  Overflow restriction mm : 0.55  Inlet press. bar : 0.35 Tolerance bar +: 0.05  Copening pressure bar : 130 Tolerance bar +: 3  Tolerance bar +: 3  Tolerance bar +: 3  Copening pressure bar : 130 Tolerance bar +: 3  Tolerance bar +: 3  Tolerance bar +: 3  Tolerance bar -: 3  Test lines : 1 680 750 073  Check tolerance cm3/1000 strokes : 37.0 Tolerance bar -: 3  Tolerance bar -: 3  Tolerance bar -: 3  Tolerance bar -: 3  Tolerance bar -: 3  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cand/1000 strokes :		7 12
Aneroid pressure   temperature   *C	TEST BENCH REQUIREMENTS	FULL-LOAD DELIVERY WITH BOOST PRESSURI
Aneroid pressure temperature *C : 45	Calibrating-oil	
Tolerance *C + : 1  Overflow restriction mm : 0.55  Inlet press. bar : 0.35  Tolerance bar + : 0.05  Tolerance bar bar : 1 688 901 022  Opening pressure bar : 130  Tolerance bar + : 3  Tolerance bar + : 3  Tolerance bar - : 3  Test lines : 1 680 750 073  X inside diameter : 2.00  X inside diameter : 2.00  X length mm : 450  INJECTION PUMP SETTING VALUES  Del. quantity cm3/1000 strckes : 54.5  Tolerance cm3/1000 strckes : 2.0  Cm3/1000 strckes : 2.0  Cm3/1000 strckes : 2.0  Cm3/1000s. : 3.0  Shutoff solenoid  Volt : 12  FULL-LOAD DELIV. WITHOUT BOOST PRESS  Rated speed rpm : 500  Del. quantity cm3/1000 strckes : 37.0  Tolerance cm3/1000s. strokes : 37.0  Tolerance cm3/1000s. strokes : 37.0  Tolerance cm3/1000s. strokes : 37.0  HOUSING-FIXED IDLE SPRING  RESIDUAL QUANTITY SETTING  Rated speed rpm : 490  Del. quantity cm3/1000 strckes : 8.5  Tolerance cm3/1000 strckes : 8.5  Tolerance cm3/1000 strckes : 8.5  Tolerance cm3/1000 strckes : 8.5  Tolerance cm3/1000 strckes : 8.5  Tolerance cm3/1000 strckes : 8.5  Tolerance cm3/1000 strckes : 8.5  Tolerance cm3/1000 strckes : 8.5	return	+ Aneroid pressure
Overflow restriction mm : 0.55  Overflow restriction mm : 0.55  Inlet press. bar : 0.35  Tolerance cm3/1000 str. + : 0.5  Spread cm3/1000 strckes : 2.0  Check tolerance cm3/1000. : 3.0  Shutoff solenoid Volt : 12  Test nozzle holde assembly : 1 688 901 022  Opening pressure bar : 130  Tolerance bar + : 3  Opening pressure bar : 130  Tolerance bar + : 3  Tolerance bar + : 3  Tolerance cm3/1000 str. + : 0.5  Shutoff solenoid Volt : 12  Check tolerance cm3/1000 str. + : 0.5  Shutoff solenoid Volt : 12  Check tolerance cm3/1000s. : 3.0  X inside diameter : 2.00  X length mm : 450  HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  REMARKS  Rated speed rpm : 490  Del. quantity cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5  Tolerance cm3/1000 strokes : 8.5	temperature °C : 45	hPa : 1000
Overflow restriction mm         : 0.55         Tolerance cm3/1000 str. +: 0.5 spread cm3/1000 strckes : 2.0 cm3/1000 strckes : 2.0 cm3/1000s.         : 2.0 cm3/1000 strckes : 2.0 cm3/1000s.         : 3.0 cm3/100s.         : 3.0 cm3/100s.         : 3.0 cm3/100s.         : 3.0 cm3/100s.         : 3.0 cm3/100s.         : 3.0 cm3/100s.         : 3.0 cm3/100s.         : 3.0 cm3/100s.         : 3.0 cm3/100s.	Tolerance °C + : 1	† Del. quantity
Overflow restriction mm         : 0.55         Tolerance cm3/1000 str. + : 0.5 spread cm3/1000 strckes : 2.0 cm3/1000 strckes : 2.0 cm3/1000s.         : 2.0 cm3/1000 strckes : 2.0 cm3/1000s.         : 3.0 cm3/100s.         : 3.0 cm3/10		+ cm3/1000 strokes : 54.5
Spread	Overflow	
Inlet press. bar : 0.35 Tolerance bar +: 0.05  Tolerance bar +: 0.05  Test nozzle holde assembly : 1 688 901 022  Opening pressure bar : 130 Tolerance bar +: 3  Tolerance bar +: 3  Tolerance bar -: 3  Tolerance bar -: 3  Tolerance bar -: 3  Tolerance bar -: 3  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 37.0  Tolerance cm3/1000 strokes : 3.0  X inside diameter : 2.00  X length mm : 450  HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 0.5 Shutoff solenoid	restriction mm : 0.55	+ cm3/1000 str. $+$ : 0.5
Tolerance bar + : 0.35		
Tolerance bar + : 0.05  Test nozzle holde assembly : 1 688 901 022  Opening pressure bar : 130  Tolerance bar + : 3  Tolerance bar : 30  Tolerance bar : 130  Tolerance bar + : 3  Tolerance bar : 140  Tolerance bar + : 3  Tolerance bar + : 3  Tolerance bar : 1680 750 073  Test lines : 1 680 750 073  Outside diameter : 6.00  x inside diameter : 2.00 x length mm : 450  REMARKS  Rated speed rpm : 500 Del. quantity cm3/1000 str. + : 0.5 Shutoff solenoid Volt : 12 Check tolerance cm3/1000s. : 3.0  HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  Rated speed rpm : 490 Del. quantity cm3/1000 str. + : 0.5 Shutoff solenoid  NOSTREMARKS  Rated speed rpm : 490 Del. quantity cm3/1000 str. + : 0.5 Shutoff solenoid		+ cm3/1000 strckes : 2.0
Test nozzle holde assembly : 1 688 901 022  Opening pressure bar : 130 Tolerance bar +-: 3  Test lines : 1 680 750 073  Outside diameter : 6.00  x inside diameter : 2.00 x length mm : 450  Remarks  Remarks  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 37.0 Tolerance cm3/1000 str. +-: 0.5 Shutoff solenoid Volt : 12 Check tolerance cm3/1000s. : 3.0  HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance	Inlet press. bar : 0.35	+ Check tolerance
Test nozzle holde assembly : 1 688 901 022  Opening pressure bar : 130  Tolerance bar + : 3  Tolerance bar + : 3  Tolerance cm3/1000 str. + : 0.5  Test lines : 1 680 750 073  Test lines : 1 680 750 073  Outside diameter : 6.00  X inside diameter : 2.00  X length mm : 450  REMARKS  REMARKS  REMARKS  Rated speed rpm : 500  Del. quantity cm3/1000 str. + : 0.5  Shutoff solenoid Volt : 12  Check tolerance cm3/1000s. : 3.0  HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5  Tolerance cm3/1000 str. + : 0.5  Shutoff solenoid	Tolerance bar +: 0.05	
Test nozzle holde assembly : 1 688 901 022  Opening pressure bar : 130  Tolerance bar +: 3  Test lines : 1 680 750 073  Outside diameter : 6.00  x inside diameter : 2.00  x length mm : 450  INJECTION PUMP SETTING VALUES  Test nozzle holde assembly : 1 688 901 022  FULL-LOAD DELIV. WITHOUT BOOST PRESS  Full-LOAD PRISS  Full-LOAD PRISS  Full-LOAD PRISS  Full-LOAD PRISS  Full-LOAD PRISS  Full-LOAD PRISS  Full-LOAD PRISS  Full-LOAD PRISS  Full-LOAD PRISS  Full-LOAD PRISS  Full-LOAD PRISS		+ Shutoff solenoid
Opening pressure bar : 130 Tolerance bar +: 3 Tolerance bar : 1 680 750 073  Test lines : 1 680 750 073  Cutside diameter : 6.00  x inside diameter : 2.00 x length mm : 450  REMARKS  REMARKS  Remarks  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 37.0 Tolerance cm3/1000 str. +: 0.5 Shutoff solenoid Volt : 12 Check tolerance cm3/1000s. : 3.0  HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 str. +: 0.5 Shutoff solenoid		+ Volt : 12
Opening pressure bar : 130       Rated speed rpm : 500         Del. quantity       37.0         Tolerance bar + : 3       Tolerance cm3/1000 strokes : 37.0         Tolerance cm3/1000 str. + : 0.5       0.5         Shutoff solenoid Volt : 12       12         Check tolerance cm3/1000s. : 3.0       3.0         x inside diameter : 2.00 x length mm : 450       HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING         REMARKS       Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 str. + : 0.5 Shutoff solenoid		)
bar : 130 Tolerance bar + : 3  Del. quantity cm3/1000 strokes : 37.0 Tolerance cm3/1000 str. + : 0.5 Shutoff solenoid Volt : 12 Check tolerance cm3/1000s. : 3.0  Vinside diameter : 2.00 x length mm : 450  HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  Reside diameter : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 str. + : 0.5 Shutoff solenoid	assembly : 1 688 901 022	+ FULL-LOAD DELIV. WITHOUT BOOST PRESSUR
bar : 130 Tolerance bar + : 3  Del. quantity cm3/1000 strokes : 37.0 Tolerance cm3/1000 str. + : 0.5 Shutoff solenoid Volt : 12 Check tolerance cm3/1000s. : 3.0  Vinside diameter : 2.00 x length mm : 450  HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  Reside diameter : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 str. + : 0.5 Shutoff solenoid		+
Tolerance bar + : 3  cm3/1000 strokes : 37.0 Tolerance cm3/1000 str. + : 0.5 Shutoff solenoid Volt : 12 Outside diameter : 6.00  x inside diameter : 2.00 x length mm : 450  REMARKS  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : 8.5 Shutoff solenoid	Opening pressure	+ Rated speed rpm : 500
Tolerance cm3/1000 str. +: 0.5 Shutoff solenoid Volt : 12 Check tolerance cm3/1000s. : 3.0  x inside diameter : 2.00 x length mm : 450  REMARKS  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 str. +: 0.5 Shutoff solenoid		+ Del. quantity
Tolerance cm3/1000 str. +: 0.5 Shutoff solenoid Volt : 12 Check tolerance cm3/1000s. : 3.0  x inside diameter : 2.00 x length mm : 450  REMARKS  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 str. +: 0.5 Shutoff solenoid	Tolerance bar +-: 3	+ cm3/1000 strokes : 37.0
Test lines : 1 680 750 073  Cutside diameter : 6.00  Injection Pump Setting Values  Shutoff solenoid  Volt : 12  Check tolerance  cm3/1000s. : 3.0  HOUSING-FIXED IDLE SPRING  RESIDUAL QUANTITY SETTING  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 8.5  Tolerance  cm3/1000 str. +: 0.5  Shutoff solenoid		
Outside diameter: 6.00  x inside diameter: 2.00  x length mm: 450  REMARKS  Rated speed rpm: 490 Del. quantity cm3/1000 strokes: 8.5 Tolerance INJECTION PUMP SETTING VALUES  Volt : 12 Check tolerance cm3/1000s. : 3.0  HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  Rated speed rpm: 490 Del. quantity cm3/1000 strokes: 8.5 Tolerance cm3/1000 strokes: 8.5 Shutoff solenoid		
Outside diameter: 6.00  x inside diameter: 2.00  x length mm: 450  REMARKS  Residual Quantity  cm3/1000 strokes: 8.5  Tolerance  cm3/1000 str. +: 0.5  Shutoff solenoid	Test lines : 1 680 750 073	
x inside diameter: 2.00 x length mm: 450  HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  Rated speed rpm: 490 Del. quantity cm3/1000 strokes: 8.5 Tolerance INJECTION PUMP SETTING VALUES  Cm3/1000 str. +: 0.5 Shutoff solenoid		
<pre>x inside diameter : 2.00 x length mm : 450  HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance INJECTION PUMP SETTING VALUES  Cm3/1000 str. +: 0.5 Shutoff solenoid</pre>	Outside diameter : 6.00	
X Length mm : 450  HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance INJECTION PUMP SETTING VALUES  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 str. + : 0.5 Shutoff solenoid		+ cm3/1000s. : 3.0
HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance INJECTION PUMP SETTING VALUES  HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  Cm3/1000 strokes : 0.5 Shutoff solenoid		+
RESIDUAL QUANTITY SETTING  Remarks  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 str. +: 0.5 Shutoff solenoid	x Length mm : 450	+
REMARKS  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 8.5  Tolerance  INJECTION PUMP SETTING VALUES  Cm3/1000 str. +: 0.5  Shutoff solenoid		
Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 8.5  Tolerance  INJECTION PUMP SETTING VALUES  Cm3/1000 str. +: 0.5  Shutoff solenoid		+ RESIDUAL QUANTITY SETTING
Del. quantity cm3/1000 strokes: 8.5 Tolerance INJECTION PUMP SETTING VALUES  Tolerance cm3/1000 str. +: 0.5 Shutoff solenoid	REMARKS	+
TOLERANCE INJECTION PUMP SETTING VALUES  + cm3/1000 strokes: 8.5  Tolerance - cm3/1000 str. +: 0.5  Shutoff solenoid		
Tolerance injection pump setting values + cm3/1000 str. + : 0.5 Shutoff solenoid		
INJECTION PUMP SETTING VALUES + cm3/1000 str. + : 0.5 + Shutoff solenoid		
+ Shutoff solenoid		
+ Shutoff solenoid	INJECTION PUMP SETTING VALUES	
TIMING NEVICE TRAVEL 10		
TELITING DEATOR LUMBER # AOUT : 15	TIMING DEVICE TRAVEL	+ Volt : 12

	+ TIMING DEVICE CHARACTERISTIC
IDLE DELIVERY	Rated speed rpm : 2000
Rated speed rpm : 440 Del. quantity	+ Aneroid pressure + hPa : 1000
cm3/1000 strokes : 16.0 Tolerance	+ SV travel mm : 6.5
cm3/1000 str. + : 1.0 Spread	Tolerance mm + : 0.4 Check
cm3/1900 strokes : 2.0 Shutoff solenoid	tolerance mm +: 0.7 Shutoff solenoid
Volt : 12	Volt : 12
HIGH IDLE SETTING	Rated speed rpm : 900 Aneroid pressure
Rated speed rpm : 490 Del. quantity	hPa : 1000
cm3/1000 strokes : 16.0 Tolerance	SV travel mm : 1.2 Tolerance mm + : 0.4
cm3/1000 str. +-: 1.0 Shutoff solenoid	Check tolerance num +-: 0.7
Volt : 12	Shutoff solenoid Volt : 12
FULL-LOAD SPEED REGULATION	SUPPLY PUMP PRESSURE CHARACTERISTIC
Rated speed rpm : 2575	+ OUT ET TOTAL TRESSORE CHARACTERISTIC
Pressure hPa : 1000 Del. quantity	Rated speed rpm : 2000 Aneroid pressure
cm3/1000 strokes : 14.0 Tolerance	hPa : 1000 Supply pomp
cm3/1000 str. ←: 2.0 Shutoff solenoid	pressure bar : 6.8 Tolerance bar + : 0.3
Volt : 12	Shutoff solenoid Volt : 12
STARTING FUEL DELIVERY	+
Rated speed rpm : 150	+ Rated speed rpm : 900 + Ameroid pressure
Del. quantity cm3/1000 strokes : 52.0	+ hPa : 1000 + Supply pomp
Tolerance	+ pressure bar : 4.2
cm3/1000 str. + : 15.0 Shutoff solenoid	Tolerance bar +-: 0.3 Shutoff solenoid
Volt : 12	+ Volt : 12
SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP	+ OVERFLOW QUANTITY
Rated speed rpm : 200	+ Rated speed rpm : 2150 + Aneroid pressure
Del. quantity cm3/1000 strokes : 53.0	+ hPa : 1000 + Overflow quantity
Tolerance cm3/1000 str. + : 3.0	+ ccm/10s : 97.2 + Tolerance
Shutoff solenoid Volt : 12	ccm/10s +-: 41.6
1 16	Check tolerance ccm/10s + : 41.6
	+ Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	+ Volt : 12
	+ Rated speed rpm : 500

Aneroid pressure hPa : 1000	† Shutoff solenoid
Overflow quantity	+ Volt : 12
ccm/1 <b>0</b> s : 62.5 Tolerance	Rated speed rpm : 2150 Aneroid pressure
ccm/10s + : 20.8	+ hPa : 1000 - Del. quantity
Check tolerance ccm/10s +-: 20.8	cm3/10CO strokes : 51.0
Shutoff solenoid Volt : 12	+ cm3/1000 str. +-: 1.0
	+ Check tolerance + cm3/1000s. + : 2.2
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 2575 Aneroid pressure	† Rated speed rpm : 2000
hPa : 1000 Del. quantity	Aneroid pressure + hPa : 1000
cm3/1000 strokes : 14.0 Tolerance	Del. quantity cm3/1000 strokes : 52.0
cm5/1000 str. + : 2.0 Check tolerance	Tolerance + cm3/1000 str. +-: 1.0
cm3/1000s. +-: 4.0 Shutoff solenoid	† Check tolerance
Volt : 12	+ cm3/1000s. + : 2.2 + Shutoff solenoid
Rated speed rpm : 2375	+ Volt : 12
Aneroid pressure hPa : 1000	+ Rated speed rpm : 500 + Aneroid pressure
Del. quantity cm3/1000 strokes : 39.0	+ hPa : 1000 + Del. quantity
Tolerance	+ cm3/1000 strokes : 48.3
Check_tolerance	+ Tolerance + cm3/1000 str. +-: 1.5
cm3/1000s. +-: 6.0 Shutoff solenoid	+ Check tolerance + cm3/1000s. ++: 3.0
Volt : 12	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 2750	+
Aneroid pressure hPa : 1000	Rated speed rpm : 1250 Aneroid pressure
Del. quantity cm3/1000 strokes : 3.0	+ hPa : 1000 + Del. quantity
Tolerance cm3/1000 str. + : 3.0	+ cm3/1000 strokes : 54.5 + Tolerance
Check tolerance cm3/1000S. +-: 3.0	cm3/1000 str. +-: 0.5 Check tolerance
Shutoff solenoid Volt : 12	+ cm3/1000s. + : 2.2 + Shutoff solenoid
	Volt : 12
Rated speed rpm : 750 Aneroid pressure	Ţ
hPa : 350 Del. quantity	+ MECHANICAL SHUTOFF +
cm3/1000 strokes : 46.0 Tolerance	Rated speed rpm : 2000 Aneroid pressure
cm3/1000 str. +-: 0.5 Check tolerance	+ hPa : 1000 + Del. quantity
cm3/1000s. +-: 3.0	cm3/1000 strokes : 1.5
	I

Tolerance cm3/1000 str. + :1.5 Check tolerance cm3/1000s. 1.5 Shutoff solenoid

Volt 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400 Del. quantity

cm3/1000 strokes : 1.5

Tolerance

cm3/1000 str. + :1.5

Check tolerance

cm3/1000s. 1.5

FULL-LOAD STOP CONTROL LEVER

400 Rated speed rpm : Del. quantity

cm3/1000 strokes : 1.5

Tolerance

cm2/1000 str. +-: 1.5

Check tolerance

cm3/1000s.1.5

#### START TRANSITION

Rated speed rpm : 380

Del. quantity

cm3/1000 strokes : 35.0

Tolerance

cm3/1000 str. +-:10.0

Shutoff solenoid

Volt 12

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm Tolerance mm +:+0,1Dimension KF mm : 6,0 +: +-0,2 Tolerance mm Dimension MS mm : 1,3

Tolerance mm

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 28,8..32,8

Control lever

position YB mm : 68,0..82,0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.06.95 Test oil : ISO 4113

Part no. : 0 460 494 409 Pump designation : VE4/9F225OR445-5

Customer-spec. information

Customer : PSA Motor : XUD 9 TF-L Power KW : 67.0

#### TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130
Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

#### REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting mm : 4.1
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm	:	1500
Aneroid pressure		
hPa	:	1000
Supply pomp		
pressure bar	:	5.7
Tolerance bar +-	:	0.3
Shutoff solenoid		
Volt	:	12

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm	:	1250
Aneroid pressure hPa	:	1000
Del. quantity		
cm3/1000 strokes	:	54.5
Tolerance cm3/1000 str. +		0.5
Spread	•	<b>u.</b> 5
cm3/1000 strokes	:	2.0
Check tolerance		
cm3/1000s.	:	3.0
Shutoff solenoid		40
Volt	:	12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm Del. quantity	:	500
cm3/1000 strokes	:	37.0
Tolerance cm3/1000 str. +-	:	0.5
Shutoff solenoid Valt	:	12
Check tolerance cm3/1000s.		7.0
CIIID/TUUUS.	ė.	3.0

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm	:	490
Del. quantity cm3/1000 strokes	:	8.5
Tolerance cm3/1000 str. +-	•	0.5

Shutoff solenoid Volt : 12	t
IDLE DELIVERY	INJECTION—PUMP TEST SPECIFICATIONS
Rated speed rpm : 440	TIMING DEVICE CHARACTERISTIC
Del. quantity cm3/1000 strokes : 16.0	Rated speed rpm : 2000
Tolerance cm3/1000 str. +-: 1.0	+ Aneroid pressure + hPa : 1000
Spread cm3/1000 strokes : 2.0	SV travel mm : 6.5 Tolerance mm +-: 0.4
Shutoff solenoid Volt : 12	Check tolerance mm +: 0.7
HIGH IDLE SETTING	Shutoff solenoid
Rated speed rpm : 490	+ Volt : 12 + Rated speed rpm : 900
Del. quantity cm3/1000 strokes : 16.0	+ Aneroid pressure
Tolerance cm3/1000 str. +-: 1.0	+ hPa : 1000 + SV travel mm : 1.2
Shutoff solenoid Volt : 12	Tolerance mm +-: 0.4 Check
FULL-LOAD SPEED REGULATION	tolerance mm +: 0.7 Shuroff solenoid
Rated speed rpm : 2575	Volt : 12
Pressure hPa : 1000 Del. quantity	SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 strokes : 14.0 Tolerance	Rated speed rpm : 2000 Aneroid pressura
cm3/1 <b>00</b> 0 str. +-: 2.0 Shutoff solenoid	hPa : 1000 Supply pomp
Volt : 12	pressure bar : 6.8 Tolerance bar + : 0.3
STARTING FUEL DELIVERY  Rated speed rpm : 150	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0	Rated speed rpm : 900
Tolerance cm3/1000 str. + : 15.0	Aneroid pressure hFa : 1000
Shutoff solenoid Volt : 12	+ Supply pomp + pressure bar : 4.2 + Tolerance bar + : 0.3
SET GRADUATED STARTING DELIVERY	Shutoff solenoid Volt : 12
CONTROL LEVER, IDLE STOP	OVERFLOW QUANTITY
Rated speed rpm : 200 Del. quantity	Rated speed rpm : 2150
cm3/1000 strokes : 53.0 Tolerance	Aneroid pressure hPa : 1000
cm3/1000 str. + : 3.0 Shutoff solenoid	Overflow quantity ccm/10s : 97.2
Volt : 12	Tolerance + : 41.6
	Check tolerance
	+ ccm/10s +-: 41.6

Shutoff solenoid Volt	: 12	‡	Del. quantity cm3/1000 strokes :	46.0
Rated speed rpm	: 500	‡	Tolerance cm3/1000 str. +-:	0.5
Aneroid pressure	: 1000	‡	Check tolerance cm3/1000s. +:	3.0
Overflow quantity ccm/10s	: 62.5	‡	Shutoff solenoid Volt :	12
Tolerance ccm/10s +-	: 20.8	‡	Rated speed rpm :	2150
Check tolerance	: 20.8	Ŧ	Aneroid pressure hPa : Del. quantity	1000
Shutoff solenoid	: 42	Ŧ	cm3/1000 strokes : Tolerance	50.1
	KAWAY CHARACTERISTIC	1	cm3/1000 str. +-: Check tolerance	1.0
Rated speed rpm	: 2575	<u> </u>	cm3/1000s. +: Shutoff solenoid	2.2
Aneroid pressure hPa	: 1000	‡	Volt :	12
Del. quantity cm3/1000 strokes	: 14.0	‡	Rated speed rpm : Aneroid pressure	2000
Tolerance cm3/1000 str. +-	: 2.0	‡	hPa : Del. quantity	1000
Check tolerance cm3/1000s. +-	: 4.0	‡	cm3/1000 strokes : Tolerance	52.0
Shutoff solenoid Volt	: 12	‡	cm3/1000 str. +-: Check tolerance	1.0
Rated speed rpm	: 2375	‡	cm3/1000s. +-: Shutoff soleroid	2.2
Aneroid pressure hPa Del. quantity	: 1000	Ŧ	Volt :	12 500
cm3/1000 strokes Tolerance	: 39.0	Ī	Rated speed rpm : Aneroid pressure hPa :	1000
cm3/1000 str. +- Check tolerance	: 5.0	Ī	Del. quantity cm3/1000 strokes :	48.3
	: 6.0	‡	Tolerance cm3/1000 str. +-:	1.5
Volt	: 12	‡	Check tolerance cm3/10G0s. +:	3.0
Rated speed rpm Aneroid pressure	: 2750	‡	Shutoff solenoid Volt :	12
hPa Del. quantity	: 1000	‡	Rated speed rpm :	1250
cm3/1000 strokes Tolerance		‡	Aneroid pressure hPa	1000
cm3/1000 str. +- Check tolerance		‡	Del. quantity cm3/1000 strokes :	54.5
cm3/1000s. +- Shutoff solenoid	: 3.0	‡	Tolerance cm3/1000 str. +:	0.5
Volt Rated speed rpm	: 750	Ŧ	Check tolerance cm3/1000s. +-: Shutoff solenoid	2.2
Aneroid pressure	: 350	Ŧ	Volt :	12
LDA/	. 550	Ŧ	MECHANICAL SHUTOFF	
HBA stroke mm	: 5.9	Ţ	HECHANICAE SHOTOLL	

wasaa aladaa i lam	:	2000
Aneroid pressure		
hPa	:	1000
Del. quantity		A P
cm3/1000 strokes	:	1.5
Tolerance		4 5
cm3/1000 str. +-	:	1.5
Check tolerance		4.5
cm3/1000s. +-	:	1.5
Shutoff solenoid		4.5
Volt	:	12

## ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm	:	400
Del. quantity cm3/1000 strokes	:	1.5
Tolerance		4.5
cm3/1000 str. +- Check tolerance	•	1.5
cm3/1000s. +-	:	1.5

## FULL-LOAD STOP CONTROL LEVER

Rated speed rpm Del. quantity	:	400
cm3/1000 strokes	:	1.5
Tolerance cm3/1000 str. +	:	1.5
Check tolerance cm3/1000s. +-	:	1.5

## START TRANSITION

Rated speed rpm Del. quantity	:	380
cm3/1000 strokes	:	35.0
Tolerance cm3/1000 str. +	:	10.0
Shutoff solenoid Volt	:	12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/		
HBA stroke mm	:	5.9
Dimension K mm	:	3,3
Tolerance mm +-	:	+-0,1
Dimension KF mm	:	6,0

Tolerance	mm	+-	:	+-0,2
Dimension	MS	mm	:	1,3
Tolerance	mm	+	:	+-0,2

# CONTROL LEVER POSITION SET

Control	lever			
position	YA mm	:	25,8.	.29,8

Control lever	
position YB mm	: 68,082,0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.06.95 Test oil : ISO 4113

Part no. : 0 460 494 410 Pump designation: VE4/9F225DR445-6

Customer-spec, information : PSA Customer

: XUD 9 TF/L Motor Power KW 67.0

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance \*C +-:

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar +-:

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Aneroid pressure

1000

4.1 Setting mm Tolerance mm 0.2 Shutoff solencid

Volt 12

## SUPPLY PUMP PRESSURE

Rated speed rpm 1500

Aneroid pressure

hPa 1000

Supply pomp

pressure bar 5.7 Tolerance bar +-: 0.3

Shutoff solenoid Volt

12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250

Aneroid pressure

1000

Del. quantity

cm3/1000 strokes : 54.5

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes : 2.0

Check tolerance

cm3/1000s. 3.0

Shutoff solenoid

Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 37.0

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid

12 Volt

Check tolerance

cm3/1000s. 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490

Del. quantity

cm3/1000 strokes : 8.5

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid	t
Volt : 12	INJECTION-PUMP TEST SPECIFICATIONS
TOLE DELIVERY	TIMING DEVICE CHARACTERISTIC
Rated speed rpm : 440 Del. quantity	+ Rated speed rpm : 2000
cm3/1000 strokes : 16.0 Tolerance	+ Aneroid pressure + hPa : 1000
cm3/1000 str. + : 1.0 Spread	+ SV travel mm : 6.5
cm3/1000 strokes : 2.0 Shutoff solenoid	+ Tolerance mm +-: 0.4 + Check
Volt : 12	tolerance mm +-: 0.7 Shutoff solenoid
HIGH IDLE SETTING	+ Volt : 12
Rated speed rpm : 490 Del. quantity	+ Rated speed rpm : 900 + Aneroid pressure
cm3/1000 strokes : 16.0 Tolerance	† inPa : 1000
cm3/1000 str. +-: 1.0 Shutoff solenoid	+ SV travel mm : 1.2 + Tolerance mm +-: 0.4
Volt : 12	+ Check + tolerance mm ++: 0.7
FULL-LOAD SPEED REGULATION	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 2575 Pressure hPa : 1000	SUPPLY PUMP PRESSURE CHARACTERISTIC
Del. quantity cm3/1 <b>000</b> strokes : 14.0	Rated speed rpm : 2000
Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid	+ Aneroid pressure + hPa : 1000
Volt : 12	Supply pomp pressure bar : 6.8
STARTING FUEL DELIVERY	+ Tolerance bar → : 0.3 + Shutoff solenoid
Rated speed rpm : 150	+ Volt : 12
Del. quantity cm3/1000 strokes : 52.0	+ Name speed rpm : 900 + Aneroid pressure
Tolerance cm3/1000 str. +-: 15.0 Shutoff solenoid	+ hPa : 1000 + Supply pomp
Volt : 12	+ pressure bar : 4.2 + Tolerance bar +-: 0.3 + Shutoff solenoid
SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP	- Volt : 12
Rated speed rpm : 200	OVERFLOW QUANTITY
Del. quantity cm3/1000 strokes : 53.0	Rated speed rpm : 2150 Aneroid pressure
Tolerance cm3/1000 str. + : 3.0	+ hPa : 1000 - Overflow quantity
Shutoff solenoid Volt : 12	+ ccm/10s : 97.2 + Tolerance
1000	ccm/10s +- : 41.6
	Check tolerance + : 41.6

Shutoff solenoid	+ Tolerance
Volt : 12	- cm3/1000 str. +-: 0.5 - Check tolerance
Rated speed rpm : 500 Aneroid pressure	cm3/1000s. + : 3.0  Shutoff solenoid
hPa : 1000 Overflow quantity	Volt : 12
ccm/10s : 62.5 Tolerance	Rated speed rpm : 2150
ccm/10s +-: 20.8	Aneroid pressure : 1000
Check tolerance	Del. quantity cm3/1000 strokes : 50.1
ccm/10s + : 20.8 Shutoff solenoid	+ Tolerance - cm3/1000 str. +-: 1.0
Volt : 12	Check tolerance cm3/1000s. +-: 2.2
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 2575 Aneroid pressure	+ Rated speed rpm : 2000
hPa : 1000 Del. quantity	+ Aneroid pressure + hPa : 1000
cm3/1000 strokes : 14.0 Tolerance	+ Del. quantity + cm3/1000 strokes : 52.0
cm3/1000 str. + : 2.0 Check tolerance	- Tolerance - cm3/1000 str. +-: 1.0
cm3/1000s. +-: 4.0 Shutoff solenoid	Check tolerance cm3/1000s. +-: 2.2
Volt : 12	Shutoff solenoid Volt : 12
Rated speed rpm : 2375 Aneroid pressure	+
hPa : 1000	+ Aneroid pressure
Del. quantity cm3/1000 strokes : 39.0	+ hPa : 1000 - Del. quantity
Tolerance cm3/1000 str. +-: 5.0	cm3/1000 strokes : 48.3 Tolerance
Check tolerance cm3/1000s. +-: 6.0	+ cm3/1000 str. +-: 1.5 + Check tolerance
Shutoff solenoid Volt : 12	cm3/1000s. +: 3.0 Shutoff solenoid
Rated speed rpm : 2750	+ Volt : 12
Aneroid pressure hPa : 1000	+ Rated speed rpm : 1250 + Aneroid pressure
Del. quantity cm3/1000 strokes : 3.0	† hPa : 1000 † Del. quantity
Tolerance cm3/1000 str. +-: 3.0	cm3/1000 strokes : 54.5
Check tolerance cm3/1000s. +-: 3.0	- cm3/1000 str. + : 0.5 - Check tolerance
Shutoff solenoid Volt : 12	+ cm3/1000s. +-: 2.2 + Shutoff solenoid
Rated speed rpm : 750	Volt : 12
Aneroid pressure hPa : 350	MECHANICAL SHUTOFF
Del. quantity	+
cm3/1000 strokes : 46.0	+ Rated speed rpm : 2000

Aneroid pressure		
hPa	:	1000
Del. quantity		
cm3/1000 strokes	:	1.5
Tolerance		
cm3/1000 str. +	:	1.5
Check tolerance		
cm3/1000s. +-	:	1.5
Shutoff solenoid		
Volt	•	12

## ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm Del. quantity	:	400
cm3/1000 strokes Tolerance	:	1.5
cm3/1000 str. +-	:	1.5
Check tolerance cm3/1000S. +-	:	1.5

## FULL-LOAD STOP CONTROL LEVER

Rated speed rpm	:	400
Del. quantity cm3/1000 strokes	:	1.5
Tolerance cm3/1000 str. +-	:	1.5
Check tolerance cm3/1000s. +-	:	1.5

## START TRANSITION

Rated speed rpm Del. quantity	:	380
cm3/1000 strokes	:	35.0
Tolerance cm3/1000 str. +-	:	10.0
Shutoff solenoid Volt	:	12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	K mm	: 3	3,3
Tolerance	mm +-	: +	-0,1
Dimension	KF mm	: 6	5,0
Tolerance	mm +	: 4	-0,2
Dimension	MS mm	: 1	1,3
Tolerance	mm +-	: +	-0,2

## CONTROL LEVER POSITION

SET

Control lever

position YA mm : 25,8..29,8

Control lever

position: YB mm : 68,082,0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.06.95 Test oil : ISO 4113

Part no. : 0 460 494 411 Pump designation : VE4/9F2250R445-7

Customer—spec. information Customer : PSA

Motor : XUD 9 TF/L Power KW : 67.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +- : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar → : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Aneroid pressure

hPa : 1000

Setting mm : 4.1
Tolerance mm + : 0.2
Shutoff solenoid

Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Aneroid pressure

hPa : 1000

Supply pomp

pressure bar : 5.7 Tolerance bar + : 0.3

Shutoff solenoid

Volt : 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250

Aneroid pressure

hPa : 1000

Del. quantity

cm3/1000 strokes : 54.5

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 2.0

Check tolerance

cm3/1000s. : 3.0

Shutoff solenoid

Volt : 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 37.0

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid

Volt : 12

Check tolerance

cm3/1000s. : 3.0

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490

Del. quantity

cm3/1000 strokes : 8.5

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid Volt : 12	†
IDLE DELIVERY	INJECTION-PUMP TEST SPECIFICATIONS
	TIMING DEVICE CHARACTERISTIC
Del. quantity	Rated speed rpm : 2000
cm3/1000 strokes : 16.0 Tolerance	+ Aneroid pressure + hPa : 1000
cm3/1000 str. + : 1.0 Spread	SV travel mm : 6.5
cm3/1000 strokes : 2.0 Shutoff solenoid	Tolerance mm +-: 0.4 Check
Volt : 12	tolerance mm + : 0.7 Shutoff solenoid
HIGH IDLE SETTING	+ Volt : 12
Rated speed rpm : 490 Del. quantity	Rated speed rpm : 900 Aneroid pressure
cm3/1000 strokes : 16.0 Tolerance	hPa : 1000
cm3/1000 str. +-: 1.0 Shutoff solenoid	SV travel mm : 1.2 Tolerance mm +-: 0.4
Volt : 12	+ Check + tolerance mm +-: 0.7
FULL-LOAD SPEED REGULATION	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 2575 Pressure hPa : 1000 Del. quantity	SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 strokes : 14.0 Tolerance	Rated speed rpm : 2000 Aneroid pressure
cm3/1000 str. + : 2.0 Shutoff solenoid	hPa : 1000 - Supply pomp
Volt : 12	+ pressure bar : 6.8 + Tolerance bar + : 0.3
STARTING FUEL DELIVERY	Shutoff solenoid Volt : 12
Rated speed rpm : 150 Del. quantity	Rated speed rpm : 900
cm3/1000 strokes : 52.0 Tolerance	Aneroid pressure
cm3/1000 str. + : 15.0 Shutoff solenoid	Supply pomp pressure bar : 4.2
Volt : 12	Tolerance bar +-: 0.3 Shutoff solenoid
SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP	+ Volt : 12
Rated speed rpm : 200	+ OVERFLOW QUANTITY
Del. quantity cm3/1000 strokes : 53.0	Rated speed rpm : 2150 Aneroid pressure
Tolerance cm3/1000 str. ←: 3.0	<pre>+ hPa : 1000 + Overflow quantity</pre>
Shutoff solenoid Volt : 12	+ ccm/10s : 97.2 + Tolerance
	+ ccm/10s +-: 41.6
	+ Check tolerance + ccm/10s +-: 41.6

Shutoff solenoid Volt	: 12	‡	Del. quantity cm3/1000 strokes	: 46.	D
Rated speed rpm	: 500	‡	Telerance cm3/1000 str. +-	: 0.	5
Aneroid pressure hPa Overflow quantity	: 1000	Ŧ	Check tolerance cm3/1000s. +- Shutoff solenoid	: 3.	0
ccm/10s Tolerance	: 62.5	Ŧ	Volt	: 1	2
ccm/10s +	: 20.8	‡	Rated speed rpm Aneroid pressure	: 2150	
Check tolerance ccm/10s +	: 20.8	‡	hPa Del. quantity	: 100	ס
Shutoff solenoid Volt	: 12	‡	cm3/1000 strokes Tolerance		
DELIVERY AND BREAK	KAWAY CHARACTERISTIC	‡	cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 1.1	
Rated speed rpm Aneroid pressure	: 2575	Ī	Shutoff solenoid	: 1:	_
hPa Del. quantity	: 1000	‡	Raited speed rpm	: 2000	-
cm3/1000 strokes Tolerance		‡	Aneroid pressure hPa	: 100	D
cm3/1000 str. +- Check tolerance		‡	Del. quantity cm3/1000 strokes	: 52.	3
cm3/1000s. +- Shutoff solenoid Volt	: 4.0 : 12	Ī	Tolerance cm3/1000 str. +- Check tolerance	: 1.	0
Rated speed rpm	: 2375	Ŧ	cm3/1000S. +- Shutoff solenoid	: 2.	2
Aneroid pressure hPa	: 1600	‡	Volt	: 1	2
Del. quantity cm3/1000 strokes	: 39.0	‡	Rated speed rpm Aneroid pressure	: 500	
Tolerance cm3/1000 str. +- Check tolerance	: 5.0	‡	hPa Del. quantity	: 100	
cm3/1000s. +- Shutoff solenoid	: 6.0	Ī	cm3/1000 strokes Tolerance cm3/1000 str. +-	: 48.3	
Volt	: 12	1	Check tolerance cm3/1000s. +-	: 3.0	
Aneroid pressure	: 2750	‡	Shutoff solenoid Volt	: 1	2
hPa Del. quantity cm3/1000 strokes	: 1000 : 3.0	‡	Rated speed rpm	: 1250	
Tolerance cm3/1000 str. +-		Ī	Aneroid pressure hPa Del. quantity	: 100	)
Check tolerance cm3/1000s.	: 3.0	<u> </u>	cm3/1000 strokes Tolerance	: 54.	5
Shutoff solenoid Volt	: 12	‡	cm3/1000 str. +- Check tolerance	: 0.	5
	: 750	‡	cm3/1000s. +- Shutoff solenoid		
Aneroid pressure hPa	: 350	‡	Volt	: 17	2
LDA/ HBA stroke mm	: 5,9	‡	MECHANICAL SHUTOFF	*	

Rated speed rpm	:	2000
Aneroid pressure		4000
hPa Del. quantity	:	1000
cm3/1000 strokes	•	1.5
Tolerance	•	1.5
cm3/1000 str. +	:	1.5
Check tolerance		
cm3/1000s. +-	:	1.5
Shutoff solenoid		40
Volt	:	12

ELECTR.	SHUTOFI	:	
CONTROL	LEVER,	IDLE	STOP

Rated speed rpm	:	400
Del. quantity cm3/1000 strokes	:	1.5
Tolerance cm3/1000 str. +-	:	1.5
Check tolerance cm3/1000s. +	:	1.5

## FULL-LOAD STOP CONTROL LEVER

•	400
:	1.5
•	1.5
:	1.5
	•

## START TRANSITION

Rated speed rpm	•	380
Del. quantity		
cm3/1000 strokes	:	35.0
Tolerance		
cm3/1000 str. +-	:	10.0
Shutoff solenoid		
Volt	:	12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/ HBA stroke mm	:	5,9
Dimension K mm	•	3,3
Tolerance mm +-	:	+-0.1
	-	6,0

Tolerance	mm	+-	:	+-0,2
Dimension	MS	mm	:	1,3
Tolerance	mm	+-	:	+-0,2

## CONTROL LEVER POSITION

Control lever		
position YA mm	:	25,829,8

CONTINOL C	.ever		
position	YB mm	:	73,087,0

End of test-specification sheet

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#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.04.95 Test oil : ISO 4113

Part no. : 0 460 494 412 Pump designation : VE4/9F2250R445-8

Customer—spec. information Customer : PSA

Motor : XUD 9 TF/L Power KW : 67.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

## REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting mm : 4.1
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 5.7
Tolerance bar + : 0.3
Shutoff solenoid
Volt : 12

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250 Arieroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 54.5 Tolerance cm3/1000 str. ←: 0.5 Spread cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid Valt 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 37.0
Tolerance
cm3/1000 str. +-: 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000s. : 3.0

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490
Del. quantity
cm3/1000 strokes : 8.5
Tolerance
cm3/1000 str. +-: 0.5

Shutoff solenoid Volt :	12 ‡		·····
IDLE DELIVERY	‡	INJECTION-PUMP TEST	SPECIFICATIONS
Rated speed rpm :	440	TIMING DEVICE CHARAC	TERISTIC
Del. quantity cm3/1000 strokes :	16.0	Rated speed rpm : Aneroid pressure	2000
Tolerance cm3/1000 str. ←:	1.0	hPa ;	1000
Spread cm3/1000 strokes :	2.0	SV travel mm : Tolerance mm + :	6.5
Shutoff solenoid	12	Check	0.4
	12	tolerance mm + : Shutoff solenoid	0.7
HIGH IDLE SETTING	100	Volt :	12
Del. quantity	490	Rated speed rpm : Aneroid pressure	900
cm3/1090 strokes : Tolerance	16.0	hPa :	1909
cm3/1000 str. +-: Shutoff solenoid	1.0	SV travel mm : Tolerance mm +-:	1.2 0.4
Volt :	12	Check tolerance mm +-:	0.7
FULL-LOAD SPEED REGULAT	+	Shutoff solenoid Volt :	12
Rated speed rpm : 2 Pressure hPa : Del. quantity	1000	SUPPLY PUMP PRESSURE	CHARACTERISTIC
cm3/1000 strokes : Tolerance	14.0	Rated speed rpm : Aneroid pressure	20 <b>00</b>
cm3/1000 str. + : Shutoff solenoid	2.0	hPa : Supply pomp	1000
Volt :	12	pressure bar : Tolerance bar + :	6.8 0.3
STARTING FUEL DELIVERY	1	Shutoff solenoid Volt :	12
Rated speed rpm : Del. quantity	150	Rated speed rpm :	900
cm3/1000 strokes :	52.0	Aneroid pressure	1000
cm3/1000 str. + : Shutoff solenoid	15.0	Supply pomp pressure bar :	4.2
Volt :	12	Tolerance bar +-: Shutoff solenoid	0.3
SET GRADUATED STARTING CONTROL LEVER, IDLE STO		Volt :	12
Rated speed rpm :	200 +	OVERFLOW QUANTITY	
Del. quantity cm3/1000 strokes :	53.0	Rated speed rpm : Aneroid pressure	2150
Tolerance cm3/1000 str. +-:	3.0	hPa : Overflow quantity	1000
Shutoff solenoid Volt :	12	ccm/10s : Tolerance	97.2
	‡	ccm/10s +-:	41.6
	‡	Check tolerance ccm/10s + :	41.6

Shutoff solenoid		+ Del. quantity
Volt	: 12	+ cm3/1000 strokes : 46.0
VOCC	• 12	
Dated award and	: 500	† Tolerance
Rated speed rpm	: 500	$+ \text{ cm} \frac{3}{1000} \text{ str.} + : 0.5$
Aneroid pressure	4000	- Check tolerance
hPa	: 1000	+  cm3/1000s. + : 3.0
Overflow quantity		+ Shutoff solenoid
ccm/10s	: 62.5	+ Volt : 12
Tolerance		+
ccm/10s +-	: 20.8	- Rated speed rpm : 2150
		+ Aneroid pressure
Check tolerance		+ hPa ; 1000
ccm/10s +-	: 20.8	Del. quantity
Shutoff solenoid		+ cm3/1000 strokes : 50.1
Volt	: 12	+ Tolerance
*000		+ cm3/1000 str. +-: 1.0
NEI TUEDY AND DOEA	KAWAY CHARACTERISTIC	Check tolerance
DELIVER! AND BREA	NAMA! CHARACTERISTIC	
Datad aread non	. 2575	
Rated speed rpm	: 2575	+ Shutoff solenoid
Aneroid pressure	4.000	+ Volt : 12
hPa	: 1000	Ť
Del. quantity	44.0	+ Rated speed rpm : 2000
cm3/1000 strokes	: 14.0	+ Aneroid pressure
Tolerance		+ hPa : 1000
cm3/1000 str. +-	: 2.0	† Del. quantity
Check tolerance		+ cm3/1000 strokes : 52.0
cm3/1000s. +-	: 4.0	+ Tolerance
Shutoff solenoid		+ cm3/1000 str. +-: 1.0
Volt	: 12	† Check tolerance
		+ cm3/1000s. +-: 2.2
Rated speed rpm	: 2375	→ Shutoff solenoid
Aneroid pressure		+ Volt : 12
hPa	: 1000	+
Del. quantity		Rated speed rpm : 500
cm3/1000 strokes	: 39.0	+ Aneroid pressure
Tolerance		+ hPa : 1000
cm3/1000 str	: 5.0	- Del. quantity
Check tolerance	•	- cm3/1000 strokes : 48.3
cm3/1000s. +-	: 6.0	Tolerance
Shutoff solenoid		- cm3/1000 str. +: 1.5
Volt	: 12	Check tolerance
VOCC	. 16	- cm3/1009s. + : 3.0
Rated speed rpm	: 2750	+ Shutoff solenoid
Aneroid pressure	. 2170	Volt : 12
hPa	: 1000	I , , , , , , , , , , , , , , , , , , ,
Del. quantity	. 1000	Rated speed rpm : 1250
	: 3.0	
cm3/1000 strokes	: 3.0	Aneroid pressure
Tolerance		+ hPa : 1000
cm3/1000 str. +-	. 70	
	: 3.0	Del. quantity
Check tolerance		+ cm3/1000 strokes : 54.5
cm3/1000s. +-		- cm3/1000 strokes : 54.5 - Tolerance
cm3/1000s. +- Shutoff solenoid	: 3.0	cm3/1000 strokes : 54.5 Tolerance cm3/1000 str. +-: 0.5
cm3/1000s. +-		- cm3/1000 strokes : 54.5 - Tolerance - cm3/1000 str. +-: 0.5 - Check tolerance
cm3/1000s. +- Shutoff solenoid Volt	: 3.0 : 12	- cm3/1000 strokes : 54.5 - Tolerance - cm3/1000 str. +-: 0.5 - Check tolerance - cm3/1000s. +-: 2.2
cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm	: 3.0	- cm3/1000 strokes : 54.5 - Tolerance - cm3/1000 str. + : 0.5 - Check tolerance - cm3/1000s. + : 2.2 - Shutoff solenoid
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure	: 3.0 : 12 : 750	- cm3/1000 strokes : 54.5 - Tolerance - cm3/1000 str. +-: 0.5 - Check tolerance - cm3/1000s. +-: 2.2
cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm	: 3.0 : 12	- cm3/1000 strokes : 54.5 - Tolerance - cm3/1000 str. + : 0.5 - Check tolerance - cm3/1000s. + : 2.2 - Shutoff solenoid
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa	: 3.0 : 12 : 750	- cm3/1000 strokes : 54.5 - Tolerance - cm3/1000 str. + : 0.5 - Check tolerance - cm3/1000s. + : 2.2 - Shutoff solenoid - Volt : 12
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure	: 3.0 : 12 : 750	- cm3/1000 strokes : 54.5 - Tolerance - cm3/1000 str. + : 0.5 - Check tolerance - cm3/1000s. + : 2.2 - Shutoff solenoid

Rated speed rpm	:	2000
Aneroid pressure hPa	:	1000
Del. quantity cm3/1000 strokes		1.5
Tolerance	•	1.3
cm3/1000 str. +- Check tolerance	:	1.5
cm3/1000s. +-	:	1.5
Shutoff solenoid Volt	:	12

## ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm Del. quantity	:	400
cm3/1000 strokes	:	1.5
Tolerance cm3/1000 str. +		1.5
Check tolerance cm3/1000s. +-		1.5

## FULL-LOAD STOP CONTROL LEVER

Rated speed rpm	:	400
Del. quantity cm3/1000 strokes	:	1.5
Tolerance cm3/1000 str. +- Check tolerance	:	1.5
cm3/1000s. +	:	1.5

## START TRANSITION

Rated speed rom Del. quantity	:	380
cm3/1000 strokes	:	35.0
Tolerance cm3/1000 str. +	:	10.0
Shutoff solenoid Volt	:	12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/ HBA stroke mm	:	5,9
	•	
Dimension K mm		3,3
Tolerance mm +	:	+-0,1
Dimension KF mm	•	6,0

Tolerance			:	+-0,2
Dimension	MS	mm	:	1,3
Tolerance	mm	+-	:	+-0,2

## CONTROL LEVER POSITION

Control lever	
position YA mm	: 25,829,8

Control	lever			
position	YB man	:	<i>£</i> 8,0.	.82,0

	1
BOSCH INJ. PUMP TEST SPECIFICATIONS	Rated speed rpm : 1500 Aneroid pressure
Note remarks	hpa : 1000
Refer to Service Info for test and	Setting mm : 4.1
adjustment instructions.	+ Tolerance mm + : 0.2
See microcard(s) W400/	+ Shutoff solenoid
	+ Volt : 12
Edition : 23.10.95 Test oil : ISO 4113	+
Test oil : ISO 4113	+ SUPPLY PUMP PRESSURE
Part no. : 0 460 494 428	Poted and an a 1500
Pump designation : VE4/9F2250R445-9	Rated speed rpm : 1500
ruip designation ; VE4/ FF223UR443-9	+ Aneroid pressure + hPa : 1000
	Supply pomp
Customer-spec. information	+ pressure bar : 5.7
Customer : PSA	+ Tolerance bar + : 0.3
Motor : XUD 9 TE-L;	+ Shutoff solenoid
	Volt : 12
	+
TEST BENCH REQUIREMENTS	FULL-LOAD DELIVERY WITH BOOST PRESSURE
Calibrating-oil	Rated speed rpm : 1250
return	+ Aneroid pressure
temperature °C : 45	- h₽a : 1000
Tolerance *C + : 1	† Del. quantity
	+ cm3/1000 strokes : 54.5
Overflow	† Tolerance
restriction mm : 0.55	+ cm3/1000 str. $+$ : 0.5
	- Spread
	+ cm3/1000 strokes : 2.0
Inlet press. bar : 0.35	+ Check tolerance
Tolerance bar +-: 0.05	+ cm3/1000s. : 3.0
	+ Shutoff solenoid
Tanés massala bulda	† Volt : 12
Test nozzle holde assembly : 1 688 901 022	FUEL LOSS SELTH HITTHOUT DOORT DEFCOURT
assembly : 1 688 901 022	+ FULL-LOAD DELIV. WITHOUT BOOST PRESSURE
Opening pressure	Rated speed rpm : 500
bar : 130	+ Del. quantity
Tolerance bar $\leftarrow$ : 3	- cm3/1000 strokes : 57.0
1-1	Tolerance
	+ cm3/1000 str. +-: 0.5
Test lines : 1 680 750 073	+ Shutoff solenoid
	+ Volt : 12
Outside diameter : 6.00	+ Check tolerance
	+ cm3/1000s. : 3.0
x inside diameter: 2.00	+
x length mm : 450	+
	+ HOUSING-FIXED IDLE SPRING
	+ RESIDUAL QUANTITY SETTING
REMARKS	† 5.4
	Rated speed rpm : 490
	Del. quantity
	+ cm3/1000 strokes : 8.5
TALLECTION DUMP CETTIALS HALLES	† Tolerance
INJECTION PUMP SETTING VALUES	+ cm3/1000 str. +: 0.5
TIMING DEVICE TRAVEL	Shutoff solenoid
TIMING DEVICE TRAVEL	+ Volt : 12

	_		_	
וחו		DEI	Т١	/FRY

Reted speed rpm	:	440
Del. quantity		
cm3/1000 strokes	:	16.0
Tolerance		
cm3/1000 str. +	:	1.0
Spiread:		
cm3/1000 strokes	:	2.0
Shutoff solenoid		
Volt	•	12

## HIGH IDLE SETTING

Rated speed rpm	:	490
Del. quantity cm3/1000 strokes	:	16.0
Tolerance cm3/1000 str		1.0
Shutoff solenoid	•	1.0
Valt	:	12

## FULL-LOAD SPEED REGULATION

Rated speed rpm	:	2575
Pressure hPa	:	1000
Del. quantity		
cm3/1000 strokes	:	14.0
Tolerance		
cm3/1000 str. +-	:	2.0
Shutoff solenoid		
Volt		12

## STARTING FUEL DELIVERY

Rated speed rpm	:	150
Del. quantity cm3/1000 strokes	:	52.0
Tolerance cm3/1000 str. +-	:	15.0
Shutoff solenoid Volt	:	12

## SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm	:	200
Del. quantity cm3/1000 strokes	:	53.0
Tolerance cm3/1000 str. +-	:	3.0
Shutoff solenoid Volt	:	12

## INJECTION-PUMP TEST SPECIFICATIONS

## TIMING DEVICE CHARACTERISTIC

	Rated speed rpm Aneroid pressure	:	2000
	hPa	:	1000
	SV travel mm Tolerance mm +- Check	:	6.5 0.4
	tolerance mm +- Shutoff solenoid	:	0.7
Volt		:	12
	Rated speed rpm		
		:	900
	Rated speed rpm Aneroid pressure hPa	:	900 1000
	Aneroid pressure hPa SV travel mm Tolerance mm +-	•	
	Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +-	•	1000
	Aneroid pressure hPa SV travel mm Tolerance mm +- Check	•	1000 1.2 0.4

SUPPLY PUMP PRESS	URE	CHARACTER
Rated speed rpm Aneroid pressure	:	2000
hPa	:	1000
Supply pomp pressure bar Tolerance bar +-	:	6.8 0.3
Shutoff solenoid	•	12
Rated speed rpm Aneroid pressure	:	900
hPa Supply pomp	:	1000
pressure bar Tolerance bar +-	:	4.2 0.3
Shutoff solenoid Volt	•	12
-	•	12
OVERFLOW QUANTITY		
Rated speed rpm Aneroid pressure	:	2150
hPa Overflow quantity	:	1000
ccm/10s Tolerance	:	97.2
ccm/10s +	:	41.6

ccm/10s +-: 41.6

Check tolerance

Aneroid pressure		+	Check tolerance			
hPa	: 1000	+	cm3/1000s. +-	:	3.0	
Overflow quantity		+	Shutoff solenoid			
ccm/10s	: 62.5	+	Volt	:	12	
Tolerance		+				
ccm/10s +-	: 20.8	+	Rated speed rpm	:	2150	
		+	Aneroid pressure			
Check tolerance		+	hPa	•	1000	
ccm/10s +-	: 20.8	+	Del. quantity			
Shutoff solenoid		+	cm3/1000 strokes	:	51.0	
Volt	: 12	+	Tolerance			
		+	cm3/1000 str. +	:	1.0	
DELIVERY AND BREAK	CAWAY CHARACTERISTIC	t	Check tolerance			
		+	cm3/1000s. +-	:	2.2	
Rated speed rpm	: 2575	+	Shutoff solenoid			
Aneroid pressure		+	Volt	:	12	
hPa	: 1000	+				
Del. quantity		+		:	2000	
cm3/1000 strokes	: 14.0	+	Aneroid pressure			
Tolerance		+	hPa	•	1000	
cm3/1000 str. +-	: 2.0	†	Del. quantity			
Check tolerance		†	cm3/1000 strokes	:	52.0	
cm3/1000s. +-	: 4.0	+	Tolerance			
Shutoff solenoid	. 40	†	cm3/1000 str. +-	:	1.0	
Volt	: 12	Ť	Check tolerance			
Datad aread non	. 2775	†	cm3/1000s. +-	:	2.2	
Rated speed rpm Aneroid pressure	: 2375	Ť	Shutoff solenoid		40	
hPa	: 1000	Ť	Volt	•	12	
Del. quantity	: 1000	T	Detect aread are	_	500	
cm3/1000 strokes	. 30.0	T	Rated speed rom	:	500	
Tolerance	: 39.0	Ť	Aneroid pressure hPa	_	4000	
cm3/1000 str. +-	: 5.0	T		:	1000	
Check tolerance	3.0	T	Del. quantity cm3/1000 strokes		/0.7	
cm3/1000s. +-	: 6.0	T	Tolerance	•	48.3	
Shutoff solenoid	. 0.0	I	cm3/1000 str. +		1.5	
Volt	: 12	I	Check tolerance	•	1.5	
1000	. 12	I	cm3/1000s. +-		3.0	
Rated speed rpm	: 2750	I	Shutoff solenoid	•	5.0	
Aneroid pressure	. 2150	I	Volt	•	12	
hPa	: 1000	I	VOCC	•	12	
Del. quantity	. 1000	1	Rated speed rpm	:	1250	
cm3/1000 strokes	: 3.0	1	Aneroid pressure	•	1230	
Tolerance	•	1	hPa	•	1000	
cm3/1000 str. +-	: 3.0	1	Del. quantity	•	1000	
Check tolerance		1	cm3/1000 strokes	•	54.5	
cm3/1000s. +-	: 3.0	1	Tolerance	•	7 (1)	
Shutoff solenoid		+	cm3/1000 str. +-	:	0.5	
Volt	: 12	+	Check tolerance			
		+	cm3/1000s. +-	:	2.2	
Rated speed rpm	: 750	+	Shutoff solenoid			
Aneroid pressure		+	Volt	•	12	
hPa	: 350	+			_	
		+				
LDA/		+	MECHANICAL SHUTOFF			
HBA stroke mm	: 5,9	+				
Del. quantity		+		:	2000	
cm3/1000 strokes	: 46.0	+	Aneroid pressure			
Tolerance		+	hPa	•	1000	
cm3/1000 str. +-	: 0.5	+				

Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 str. +: 1.5
Check tolerance
cm3/1000s. +: 1.5
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm :

Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 str. +-: 1.5
Check tolerance
cm3/1000s. +-: 1.5

400

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 7.5
Tolerance
cm3/1000 str. +: 1.5
Check tolerance
cm3/1000s. +: 1.5

#### START TRANSITION

Rated speed rpm : 380
Del. quantity
cm3/1000 strokes : 35.0
Tolerance
cm3/1000 str. +-: 10.0
Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5,9
Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 6,0
Tolerance mm + : +0,2
Dimension MS mm : 1,3
Tolerance mm + : +0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 28,8..32,8

Control lever

position YB mm : 68,0..82,0

BOSCH INJ. PUMP TE	ST SPECIFICATIONS
Note remarks	
Refer to Service In adjustment instruct See microcard(s) W	tions.
	: 10.09.92 : ISO 4113
Part no. Pump designation	: 0 460 494 310 : VE4/9F2150R474
4 4	ormation : PSA : XUD11ATE-L BVM
TEST BENCH REQUIRE	MENTS
Inlet press. bar Tolerance bar +-	: 0.35 : 0.05
Test nozzle holde assembly	: 1 688 901 022
Opening pressure bar Tolerance bar +-	: 130 : 3
Test lines	: 1 680 750 073
Outside diameter	: 6.00
x inside diameter : x length mm	: 2. <b>00</b> : 450
REMARKS	
BEGINNING OF DELIVE	ERY
Start of delivery b	olocking
Plunger stroke mm : Tolerance mm + : Outlet	
INJECTION PUMP SETT	TING VALUES
TIMING DEVICE TRAVE	EL.
J27	

Rated speed rpm Aneroid pressure hPa	:	1250 1000			
ıra	•	1300			
Setting mm Tolerance mm +- Shutoff solenoid	:	2.5 0.2			
Volt	:	12			
SUPPLY PUMP PRESSURE					
Rated speed rpm Aneroid pressure	:	1250			
hPa Supply pomp	:	1000			
pressure bar	:	5.3			
Tolerance bar +- Shutoff solenoid	•	0.3			
Volt	:	12			
FULL-LOAD DELIVER	Y W	TH BOOST	PRESSURE		
Rated speed rpm Aneroid pressure	:	1250			
hPa	:	1000			
Del. quantity cm3/1000 strokes	:	61.5			
Tolerance cm3/1000 str. +-	:	0.5			
Spread cm3/1000 strokes	:	2.5			
Check tolerance cm3/1000S.	:	2.5			
Shutoff solenoid	:	12			
FULL-LOAD DELIV. WITHOUT BOOST PRESSURE					
Rated speed rpm Del. quantity	:	500			
cm3/1000 strokes Tolerance	:	43.0			
cm3/1000 str. +	:	0.5			
Spread cm3/1000 strokes	:	2.5			
Shutoff solenoid Volt	:	12			
Check tolerance cm3/1000s.	:	2.5			
Check tolerance cm3/1000s.	:	2.5			
J. 100001	•	<b></b>			
HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING					
	:	550			
Del. quantity cm3/1000 strokes	:	3.0			

Tolerance	+
cm3/1000 str. +-: 0.5 Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
IDLE DELIVERY	Rated speed rpm : 2000
Rated speed rpm : 325 Del. quantity	Aneroid pressure hPa : 1000
cm3/1000 strokes : 13.0 Tolerance	SV travel mm : 5.9
cm3/1000 str. + : 1.0 Spread	Tolerance mm + : 0.4
cm3/1000 strokes : 2.0 Shutoff solenoid	tolerance mm + : 0.7 Shutoff solenoid
Volt ; 12	+ Volt : 12
HIGH IDLE SETTING	Rated speed rpm : 1000 Aneroid pressure
Rated speed rpm : 450 Del. quantity	hPa : 1000
cm3/1000 strokes : 12.0 Tolerance	SV travel mm : 1.3 + Tolerance mm + : 0.4
cm3/1000 str. +- : 1.0 Shutoff solenoid	Check tolerance mm +: 0.7
Volt : 12	+ Shutoff solenoid + Volt : 12
FULL-LOAD SPEED REGULATION	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
Rated speed rpm : 2250 Pressure hPa : 1000	+ Rated speed rpm : 2000
Del. quantity cm3/1000 strokes : 52.0	Aneroid pressure hPa : 1000
Tolerance cm3/1000 str. +-: 3.0	Supply pomp pressure bar : 7.4
Shutoff solenoid Volt : 12	+ Tolerance bar + : 0.3 + Shutoff solenoid
STARTING FUEL DELIVERY	Volt : 12
Rated speed rpm : 100	Rated speed rpm : 1000 Aneroid pressure
Del. quantity cm3/1000 strokes : 75.0	+ hPa : 1000 + Supply pomp
Tolerance cm3/1000 str. +-: 5.0	pressure bar : 4.6 Tolerance bar +: 0.3
Shutoff solenoid Volt : 12	+ Shutoff solenoid + Volt : 12
SET GRADUATED STARTING DELIVERY	+ OVERFLOW QUANTITY
CONTROL LEVER, IDLE STOP	Rated speed rpm : 2000
Rated speed rpm : 200 Del. quantity	Overflow quantity ccm/10s : 97.2
cm3/1000 strokes : 77.0 Tolerance	Tolerance + : 41.6
cm3/1000 str. +-: 1.0 Shutoff solenoid	Check tolerance
Volt : 12	ccm/10s + : 41.6 Shutoff solenoid
	+ Volt : 12

			+	Rated speed rpm	:	2000	
Rated speed rpm	:	500	+	Aneroid pressure			
Overflow quantity			+	hPa	:	1000	
ccm/10s	:	62.5	1	Del. quantity	-		
Tolerance				cm3/1000 strokes		56.5	
ccm/10s +-		20.8	1	Tolerance	•	50.5	
	•	20.0	Ţ	cm3/1000 str. +		1.5	
Check tolerance			Ť		:	1.5	
		20.0	†	Check tolerance			
ccm/10s +	:	20.8	†	cm3/1000s. +-	:	2.3	
Shutoff solenoid			+	Shutoff solenoid			
Volt	:	12	+	Volt	:	12	
			+				
DELIVERY AND BREAK	CAWA	Y CHARACTERISTIC	; }	Rated speed rpm	:	1000	
			1	Aneroid pressure			
Rated speed rpm	:	2250	1	hPa		1000	
Aneroid pressure	•	2230	1	Del. quantity	•	1000	
hPa	•	1000	T	cm3/1000 strokes		62.0	
Del. quantity	•	1000	T		•	92.0	
		E2 0	Ť	Tolerance		4 -	
cm3/1000 strokes	:	52.0	†	cm3/1000 str. +-	:	1.5	
Tolerance			†	Check tolerance			
cm3/1000 str. +	:	3.0	+	cm3/1000s. +-	:	2.5	
Check tolerance			+	Shutoff solenoid			
cm3/1000s. +-	:	4.0	+	Volt	:	12	
Shutoff solenoid			1				
Volt	:	12	1	Rated speed rpm	:	500	
	•		1	Aneroid pressure	•	200	
Rated speed rpm	:	2400	1	hPa		1000	
Aneroid pressure	•	2400	T		•	1000	
hPa		1000	T	Del. quantity		11 5	
	•	1000	Ť	cm3/1000 strokes	:	61.5	
Del. quantity		777.0	†	Tolerance			
cm3/1000 strokes	•	37.0	+	cm3/1000 str. +-	:	î.5	
Check tolerance			+	Check tolerance			
cm3/1000s. +-	:	4.0	+	cm3/1000s. +-	:	2.5	
Shutoff solenoid			+	Shutoff solenoid			
Volt	:	12	1	Volt	:	12	
			1		•		
Rated speed rpm	:	2700	1.	Rated speed rpm	:	1250	
Aneroid pressure	•		1	Aneroid pressure	•	1230	
hPa	:	1000	1	hPa		1000	
Del. quantity	•	1000	T		:	1000	
		8.0	T	Del. quantity		/A F	
cm3/1000 strokes	•	0.0	Ť	cm3/1000 strokes	:	61.5	
Tolerance		~ 0	†	Tolerance			
cm3/1000 str. +	•	3.0	+	cm3/1000 str. +-	:	0.5	
Check tolerance		, ,	†	Check tolerance		<u> </u>	
cm3/1000s. +-	:	4.0	+	cm3/1000s. +-	:	2.3	
Shutoff solenoid			+	Shutoff solenoid			
Volt	:	12	+	Volt	:	12	
			+				
Rated speed rpm	:	750	1				
Aneroid pressure			1	MECHANICAL SHUTOFF	:		
hPa	•	400	1				
Del. quantity	•	100	1	Rated speed rpm	:	2000	
cm3/1000 strokes		56.5	T	Aneroid pressure	•	2000	
	•	JU. J	T			1000	
Tolerance		0.5	Ť	hPa	:	1000	
cm3/1000 str. +-	:	0.5	t	Del. quantity			
Check tolerance		<b>3</b> 4	t	cm3/1000 strokes	:	1.5	
cm3/1000s. +-	:	3.0	+	Tolerance			
Shutoff solenoid			+	cm3/1000 str. +-	:	1.5	
Volt	:	12	+	Check tolerance			
			+	cm3/1000s. +-	:	1.5	
			•			_	

Shutoff solenoid Volt	:	12	
ELECTR. SHUTOFF CONTROL LEVER, ID	LE	STOP	
Rated speed rpm Del. quantity	:	325	
cm3/1000 strokes Tolerance	:	1.5	
cm3/1000 str. +- Check tolerance		1.5	
cm3/1000s. +-	. :	1.5	
FULL-LOAD STOP CO	NTR	OL LEVER	
Rated speed rpm Del. quantity	:	325	
cm3/1000 strokes Tolerance	:	1.5	
cm3/1000 str. +- Check tolerance	:	1.5	
cm3/1000s. +-	:	1.5	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt		8.0 3.0 3.0 12	
EXHAUST-GAS RECIR	CUL	ATION	
	:	1000	
Aneroid pressure hPa	:	1000 1000	
Aneroid pressure hPa Del. quantity cm3/1000 strokes	:		
Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	:	1000	
Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	:	1000 16.0	
Check tolerance	:	1000 16.0 0.5	
Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	:	1000 16.0 0.5 3.0	

Del. quantity
cm3/1000 strokes : 40.5
Tolerance
cm3/1000 str. + : 3.5
Shutcff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +-0,1
Dimension KF mm : 5,4
Tolerance mm + : +-0,2
Dimension MS mm : 1,1
Tolerance mm + : +-0,2

MICROSWITCH

SET

mm : 0,8..3,0 : ARF 12,0

End of test-specification sheet

K02

	+
BOSCH INJ. PUMP TEST SPECIFICATIONS	Rated speed rpm : 1250
Note compute	Aneroid pressure
Note remarks	† hPa : 1000
Refer to Service Info for test and	T Setting mm · 25
adjustment instructions.	+ Setting mm : 2.5 + Tolerance mm +-: 0.2
See microcard(s) W400/	+ Shutoff solenoid
	+ Volt : 12
Edition : 10.09.92	+
Test oil : ISO 4113	+ SUPPLY PUMP PRESSURE
Past no . 0 //0 /0/ 747	t Date de marche de la 1250
Part no. : 0 460 494 313  Pump designation : VE4/9F2150R474-1	Rated speed rpm : 1250
rump designation . VE47 FF2130K474-1	Aneroid pressure + hPa : 1000
	hPa : 1000 Supply pomp
Customer—spec. information Customer : PSA	pressure bar : 5.3
Customer : PSA	pressure bar : 5.3 Tolerance bar +-: 0.3
Motor : XUD11ATE-L/BVA	+ Shutoff solenoid
	+ Volt : 12
	<b>.</b>
TEST BENCH REQUIREMENTS	+ FULL-LOAD DELIVERY WITH BOOST PRESSURE
	Poted around non 1250
Inlet press. bar : 0.35	+ Rated speed rpm : 1250 + Aneroid pressure
Tolerance bar +-: 0.05	+ hPa : 1000
	Del. quantity
	cm3/1000 strokes : 61.5
Test nozzle holde	+ Tolerance
assembly : 1 688 901 022	+ cm3/1000 str. +-: 0.5
	+ Spread
Opening pressure	+ cm3/1000 strokes : 2.5
bar : 130	+ Check tolerance
Tolerance bar + : 3	+ cm3/1000s. : 2.5
	+ Shutoff solenoid + Volt : 12
Test lines : 1 680 750 073	I voct . 12
1 000 11100	+ FULL-LOAD DELIV. WITHOUT BOOST PRESSURE
Outside diameter : 6.00	+
	+ Rated speed rpm : 500
x inside diameter : 2.00	+ Del. quantity
x length mm : 450	+ cm3/1000 strokes : 43.0
	+ Tolerance
DEMARKS	+ cm3/1000 str. +-: 0.5
REMARKS	+ Spread + cm3/1000 strokes : 2.5
	Shutoff solenoid
	+ Volt : 12
BEGINNING OF DELIVERY	+ Check tolerance
	- cm3/1000s. : 2.5
Start of delivery blocking	+ Check tolerance
	+ cm3/1000s. : 2.5
Plunger stroke mm: 0,3	†
Tolerance mm +: +-0,02	HOUGTNG FTUES TO S COSTO
Outlet : A	+ HOUSING-FIXED IDLE SPRING
	RESIDUAL QUANTITY SETTING
INJECTION PUMP SETTING VALUES	Rated speed rpm : 550
THE PROPERTY OF PARTY AND AND AND AND AND AND AND AND AND AND	+ Del. quantity
TIMING DEVICE TRAVEL	- cm3/1000 strokes : 3.0

K03

Tolerance +	
cm3/1000 str. +-: 0.5	
Shutoff solenoid Volt : 12	INJECTION-PUMP TEST SPECIFICATIONS
+	TIMING DEVICE CHARACTERISTIC
IDLE DELIVERY	Rated speed rpm : 2000
Rated speed rpm : 325  Del. quantity	Aneroid pressure
cm3/1000 strokes : 13.0	
Tolerance + 1.0 + 1.0	SV travel mm : 5.9 Tolerance mm +: 0.4
Spread	Check
cm3/1000 strokes : 2.0 + Shutoff solenoid +	tolerance mm + : 0.7 Shutoff solenoid
Volt : 12	Volt : 12
HIGH IDLE SETTING	Rated speed rpm : 1000 Aneroid pressure
Rated speed rpm : 450 + Del. quantity	hPa : 1000
cm3/1000 strokes : 12.0	SV travel mm : 1.3
Tolerance + 1.0 + 1.0	Tolerance mm +: 0.4 Check
Shutoff solenoid Volt : 12	tolerance mm +-: 0.7 Shutoff solenoid
+	Volt : 12
FULL-LOAD SPEED REGULATION	SUPPLY PUMP PRESSURE CHARACTERISTIC
Rated speed rpm : 2250	
Pressure hPa : 1000 +	Rated speed rpm : 2000 Aneroid pressure
cm3/1000 strokes : 52.0	hPa : 1000
cm3/1000 str. + : 3.0	Supply pomp pressure bar : 7.4
Shutoff solenoid + 12 +	Tolerance bar +-: 0.3 Shutoff solenoid
+	Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 1000
Rated speed rpm : 100	Aneroid pressure
Del. quantity + cm3/1000 strokes : 75.0 +	hPa : 1000 Supply pomp
Tolerance	pressure bar : 4.6
cm3/1000 str. +: 5.0 + Shutoff solenoid +	Tolerance bar +-: 0.3 Shutoff solenoid
Volt : 12	Volt : 12
SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP	OVERFLOW QUANTITY
Rated speed rpm : 200	Rated speed rpm : 2000 Overflow quantity
Del. quantity	ccm/10s : 97.2
cm3/1000 strokes : 77.0 + Tolerance +	Tolerance ccm/10s +-: 41.6
cm3/1000 str. +-: 1.0 +- Shutoff solenoid +-	Check tolerance
Volt : 12	ccm/10s + : 41.6
<b>‡</b>	Shutoff solenoid Volt : 12
1	• • •

		1	Datad annad num	2000
Rated speed rpm	: 500	I	Rated speed rpm : Aneroid pressure	2000
Overflow quantity		1	hPa :	1000
ccm/10s	: 62.5	+	Del. quantity	
Tolerance		+	cm3/1000 strokes :	56.5
ccm/10s +-	: 20.8	+	Tolerance	
Chark tolonomes		†	cm3/1000 str. +:	1.5
Check tolerance ccm/10s +	: 20.8	Ť	Check tolerance cm3/1000s. +-:	2.3
Shutoff solenoid	. 20.0	I	Shutoff solenoid	2.3
Volt	: 12	1	Volt :	12
		+		
DELIVERY AND BREAK	KAWAY CHARACTERISTIC	+	Rated speed rpm :	1000
Dated amond non	. 2250	†	Aneroid pressure	4000
Rated speed rpm Aneroid pressure	: 2250	<b>†</b>	hPa :	1000
hPa	: 1000	I	Del. quantity cm3/1000 strokes :	62.0
Del. quantity		1	Tolerance	02.0
cm3/1000 strokes	: 52.0	1	cm3/1000 str. +:	1.5
Tolerance		+	Check tolerance	
cm3/1000 str. +	: 3.0	+	cm3/1000s. +-:	2.5
Check tolerance		+	Shutoff solenoid	40
cm3/1000s. +- Shutoff solenoid	: 4.0	1	Volt :	12
Volt	: 12	I	Rated speed rpm :	500
		1	Aneroid pressure	<b>700</b>
Rated speed rpm	: 2400	+	hPa :	1000
Aneroid pressure		+	Del. quantity	
hPa	: 1000	+	cm3/1000 strokes :	61.5
Del. quantity cm3/1000 strokes	: 37.0	†	Tolerance	4.5
Check tolerance	: 57.0	Ī	cm3/1000 str. +-: Check tolerance	1,5
cm3/1000s. +	: 4.0	I	cm3/1000s. +-:	2.5
Shutoff solenoid		+	Shutoff solenoid	
Volt	: 12	+	Volt :	12
<b>~</b>		+		4
Rated speed rpm	: 2700	†	Rated speed rpm :	1250
Aneroid pressure hPa	: 1000	Ī	Aneroid pressure hPa :	1000
Del. quantity	. 1000	I	Del. quantity	1000
cm3/1000 strokes	: 8.0	1	cm3/1000 strokes :	61.5
Tolerance		+	Tolerance	
cm3/1000 str. +-	: 3.0	+	cm3/1000 str. + :	0.5
Check tolerance		†	Check tolerance	2.7
cm3/1000S. +- Shutoff solenoid	: 4.0	1	cm3/1000s. +-: Shutoff solenoid	2.3
Volt	: 12	I	Volt :	12
		1		16
Rated speed rpm	: 750	+		
Aneroid pressure	400	+	MECHANICAL SHUTOFF	
hPa	: 400	†	Data dama da da da da da da da da da da da da da	2000
Del. quantity cm3/1000 strokes	: 56.5	Ī	Rated speed rpm : Aneroid pressure	2000
Tolerance	. ,,,,,,	I	hPa :	1000
cm3/1000 str. +	: 0.5	1	Del. quantity	1000
Check tolerance		+	cm3/1000 strokes :	1.5
cm3/1000s. +-	: 3.0	+	Tolerance	<b>.</b>
Shutoff solenoid	. 42	†	cm3/1000 str. +-:	1.5
Volt	: 12	†	Check tolerance cm3/1000s. +-:	1 5
		+	UND/10003. TT:	1.5

Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ICR			Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt	-: 3.5
Del. quantity cm3/1000 strokes	: 1.5	‡	ASSEMBLY AND ADJ	JSTMENT DIMENSIONS
Tolerance cm3/1000 str. +-		1	Dimension K mm	
Check tolerance		Ŧ	Tolerance mm +	-:+0,1
cm3/1000s. +-	1.5	‡	Dimension KF mm Tolerance mm +	: 5,4 -: +-0,2
FULL-LOAD STOP CO		+	Dimension MS mm	
Rated speed rpm Del. quantity	: 325	‡		
cm3/1000 strokes Tolerance	: 1.5	‡	MICROSWITCH SET	
cm3/1000 str. +- Check tolerance		+	mm	: 0,83,0
	: 1.5	Ŧ	***************************************	: ARF ,12,0
		† + +	CONTROL LEVER POS SET	SITION
IDLE DELIVERY Rated speed rpm	: 375	+	Control lever position YA mm	: 34,338,3
Del. quantity cm3/1000 strokes		+	Control lever position YB mm	: 73,788,3
Tolerance cm3/1000 str. +-	: 3.0	Ŧ		
Check tolerance cm3/1000s. +	3.0	‡		
Shutoff solenoid Volt	: 12	<u>†</u>	End of test-spec	ification sheet
Vocc	. ,,	+		
EXHAUST-GAS RECIR	CULATION			
Rated speed rpm	: 1000	+		
Aneroid pressure hPa	: 1000	Ţ		
Del. quantity cm3/1000 strokes Tolerance	: 25.5	<u> </u>		
cm3/1000 str. +-	: 0.5	Ŧ		
Check tolerance cm3/1000s. +-	: 3.0	‡		
Shutoff solenoid Volt	: 12	‡		
START TRANSITION	-	‡		
Rated speed rpm	: 325	‡		

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.02.95 Test oil : ISO 4113

: 0 460 494 386 Part no. Pump designation: VE4/9F2150R474-2

Customer-spec. information : PSA Customer

Motor : XUD11ATE-L/BVA

Power KW 78.0

# TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C Tolerance \*C +-:

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar +:

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar +: 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

2.00 x inside diameter: x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

# TIMING DEVICE TRAVEL

Rated speed rpm 1250

Anaroid pressure

hPa 1000

Setting mm 2.5 Tolerance mm 0.2 Shutoff solenoid

12 Volt

#### SUPPLY PUMP PRESSURE

Rated speed rpm 1250

Aneroid pressure

1000 hPa

Supply pomp

pressure bar 5.3 Tolerance bar +-: 0.3

Shutoff solenoid

Volt 12

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

0.5

Rated speed rpm 1250 :

Aneroid pressure

1000 hPa Del. quantity

cm3/1000 strokes :

61.5 Tolerance

cm3/1000 str. +-:

Spread cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s. 2.5

Shutoff solenoid

Volt 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 43.0

Tolerance

cm3/1000 str. +-:0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt 12

Check tolerance

cm3/1000s. 2.5

Check tolerance

cm3/1000s. 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 550

Del. quantity	<del>1</del>	<del> </del>
cm3/1000 strokes	: 3.0	
Tolerance	1	
cm3/1000 str. +	-: 0.5	
Shutoff solenoid	12	INJECTION-PUMP TEST SPECIFICATIONS
Volt	: 12	TIMING RELICE GUARANTERIOTA
THE NELTHERY	7	TIMING DEVICE CHARACTERISTIC
IDLE DELIVERY	1	Dated aread area a 2000
Rated speed rpm	: 325	Rated speed rpm : 2000
Del. quantity	، عد	Aneroid pressure hPa : 1000
cm3/1000 strokes	: 13.0	- hPa : 1000
Tolerance		SV travel mm : 5.9
cm3/1000 str. +-	· : 1.0	- Tolerance mm +-: 0.4
Spread		- Check
cm3/1000 strokes	: 2.0	tolerance mm +-: 0.7
Shutoff solenoid		- Shutoff solenoid
Volt	: 12	- Volt : 12
<del></del>	· · · · · · · · · · · · · · · · · · ·	•
HIGH IDLE SETTING	; <u>4</u>	- Rated speed rpm : 1000
	4	- Aneroid pressure
Rated speed rpm	: 450	- hPa : 1000
Del. quantity	+	-
cm3/1000 strokes	: 12.0	- SV travel mm : 1.3
Tolerance		- Tolerance mm +-: 0.4
cm3/1000 str. +-	·: 1.6 +	- Check
Shutoff solenoid	+	tolerance mm +-: 0.7
Volt	: 12	- Shutoff solenoid
#HILL   AAA	+	- Volt : 12
FULL-LOAD SPEED R	EGULATION	
Dakad amend as-	. 3350	SUPPLY PUMP PRESSURE CHARACTERISTIC
Rated speed rpm	: 2250	Poted aread area
Pressure hPa	: 1000	- Rated speed rpm : 2000
Del. quantity cm3/1000 strokes	. 52.0	- Aneroid pressure
Tolerance	: 52.0	- hPa : 1000
cm3/1000 str. +-	.: 3.0	- Supply pomp - pressure bar : 7.4
Shutoff solenoid	. 5.0	- pressure bar : 7.4 - Tolerance bar +-: 0.3
Volt	: 12	- Toterance par +- : 0.3 - Shutoff solenoid
1466	· I	- Volt : 12
STARTING FUEL DEL	IVERY	_
		- Rated speed rpm : 1000
Rated speed rpm	: 100	- Aneroid pressure
Del. quantity	+	- hPa : 1000
cm3/1000 strokes	: 75.0	- Supply pomp
Tolerance	4	pressure bar : 4.6
cm3/1000 str. +-	: 5.0	Tolerance bar + : 0.3
Shutoff solenoid	+	- Shutoff solenoid
Volt	: 12	- Volt : 12
	+	
SET GRADUATED STA	•	- OVERFLOW QUANTITY
CONTROL LEVER, ID	LE STOP	-
Dadad assault to	. 200	- Rated speed rpm : 2000
Rated speed rpm	: 200	- Overflow quantity
	†	- ccm/10s : 97.2
Del. quantity		- Tolerance
cm3/1000 strokes	: 77.0	/40-
cm3/1000 strokes Tolerance	+	- ccm/10s +-: 41.6
cm3/1000 strokes Tolerance cm3/1000 str. +-	+	•
cm3/1000 strokes Tolerance	+	- ccm/10s +-: 41.6 - Check tolerance - ccm/10s +-: 41.6

Shutoff solenoid   Volt   12   Volt   Volt   12   Volt	Shutoff s Volt	sol <b>en</b> oid	: 12	‡	Check tolerance cm3/1000s. +-	: 3	3.0
Camput   C	Rated spe	eed rpm		‡		:	12
Check tolerance   Crm/10s   + : 20.8     Del. quantity   cm3/1000 strokes : 56.5   Tolerance   Crm/10s   + : 20.8   Tolerance   Crm/10s   + : 20.8   Tolerance   Crm/1000 strokes : 56.5   Tolerance   Crm/1000 strokes : 56.5   Tolerance   Crm/1000 strokes : 56.5   Tolerance   Crm/1000 strokes : 2.3   Shutoff solenoid   Volt   : 12   Check tolerance   Crm/1000 strokes : 52.0   Check tolerance   Crm/1000 strokes : 52.0   Check tolerance   Crm/1000 strokes : 52.0   Check tolerance   Crm/1000 strokes : 52.0   Check tolerance   Crm/1000 strokes : 52.0   Check tolerance   Crm/1000 strokes : 61.5   Check tolerance   Crm/1000 strokes : 61.5   Check tolerance   Crm/1000 strokes : 61.5   Check tolerance   Crm/1000 strokes : 61.5   Check tolerance   Crm/1000 strokes : 61.5   Check tolerance   Crm/1000 strokes : 61.5   Check tolerance   Crm/1000 strokes : 61.5   Check tolerance   Crm/1000 strokes : 61.5   Check tolerance   Crm/1000 strokes : 61.5   Check tolerance   Crm/1000 strokes : 61.5   Check tolerance   Crm/1000 strokes : 61.5   Check tolerance   Crm/1000 strokes : 61.5   Check tolerance   Crm/1000 strokes : 61.5   Check tolerance   Crm/1000 strokes : 61.5   Check tolerance   Crm/1000 strokes : 61	ccm/10s		: 62.5	Ī		: 2000	)
Check tolerance			: 20.8	<u> </u>	hPa	: 10	000
DELIVERY AND BREAKAWAY CHARACTERISTIC	ccm/10s	+	: 20.8	‡	cm3/1000 strokes Tolerance		
DELIVERY AND BREAKAWAY CHARACTERISTIC   Rated speed rpm   2250   Aneroid pressure   hPa   1000   Aneroid pressure   hPa   1000   Aneroid pressure   hPa   1000   Aneroid pressure   hPa   1000   El. quantity   cm3/1000 strokes   52.0   Del. quantity   cm3/1000 strokes   52.0   Check tolerance   cm3/1000 strokes   62.0   cm3/1000		solenoid	: 12	+	Check tolerance		
Rated speed rpm   2250	DELIVERY	AND BREAK	(AWAY CHARACT	TERISTIC T	Shutoff solenoid		
hPa         : 1000         Aneroid pressure           Del. quantity         bel. quantity         1000           cm3/1000 strokes         : 52.0         Del. quantity           cm3/1000 str.         + : 3.0         Tolerance           check tolerance         cm3/1000 str.         + : 1.5           cm3/1000 str.         + : 4.0         Check tolerance           cm3/1000 strokes         - : 2.5           Shutoff solenoid         Volt         : 12           Rated speed rpm         : 2400         Rated speed rpm         : 500           Aneroid pressure         hPa         : 1000           hPa         : 1000         Aneroid pressure           hPa         : 1000         Aneroid pressure           hPa         : 1000         Shutoff solenoid           Volt         : 1.5         Check tolerance           cm3/1000 str.         : 1.5         Check tolerance           cm3/1000 strokes         : 37.0         Shutoff solenoid           Volt         : 1.5         Check tolerance           cm3/1000 strokes         : 8.0         Aneroid pressure           hPa         : 1000         Shutoff solenoid           Volt         : 125           Rated speed rp			: 2250	Ţ		•	
Del. quantity	hPa		: 1000	‡	Aneroid pressure		
cm3/1000 str. +: 3.0       Tolerance cm3/1000 str. +: 1.5         cm3/1000s. +: 4.0       Check tolerance cm3/1000 str. +: 2.5         Shutoff solenoid volt : 12       Shutoff solenoid volt : 12         Rated speed rpm : 2400       Rated speed rpm : 500         Aneroid pressure hPa : 1000 strokes : 37.0       Aneroid pressure hPa : 1000         bel. quantity cm3/1000 strokes : 37.0       Del. quantity cm3/1000 strokes : 61.5         cm3/1000s. +: 4.0       Tolerance cm3/1000 strokes : 61.5         cm3/1000s. +: 4.0       Tolerance cm3/1000 str. +: 1.5         Check tolerance cm3/1000s. +: 2700 Aneroid pressure hPa : 1000       Shutoff solenoid volt : 12         Aneroid pressure hPa : 1000 strokes : 8.0       Aneroid pressure hPa : 1000         bel. quantity cm3/1000 strokes : 8.0       Aneroid pressure hPa : 1000         cm3/1000 strokes : 3.0       Del. quantity cm3/1000 strokes : 61.5         cm3/1000 strokes : 4.0       Tolerance cm3/1000 str. +: 0.5         Shutoff solenoid volt : 12       Check tolerance cm3/1000 str. +: 0.5         Check tolerance cm3/1000 str. +: 0.5       Check tolerance cm3/1000 str. +: 0.5         Check tolerance cm3/1000 str. +: 0.5       Check tolerance cm3/1000 str. +: 0.5         Check tolerance cm3/1000 str. +: 0.5       Check tolerance cm3/1000 str. +: 0.5         Check tolerance cm3/1000s strokes : 61.5       Aneroid pressure hPa : 2000	cm3/1000	strokes	: 52.0	‡	Del. quantity		
cm3/1000s.       + : 4.0       Check tolerance cm3/1600s.       + : 2.5         Shutoff solenoid Volt       : 12       Shutoff solenoid Volt       : 12         Rated speed rpm       : 2400       Rated speed rpm       : 500         Aneroid pressure hPs       : 1000       Aneroid pressure hPa cm3/1000 strokes : 61.5         Load tolerance cm3/1000 strokes : 37.0       Del. quantity cm3/1000 strokes : 61.5         Check tolerance cm3/1000 strokes : 61.5       Tolerance cm3/1000 str.       : 1.5         Check tolerance cm3/1000 str.       : 2.5       Shutoff solenoid Volt : 12         Rated speed rpm       : 2700       Shutoff solenoid Volt : 12       Reted speed rpm : 1250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 8.0       Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 61.5       Tolerance cm3/1000 strokes : 61.5         Check tolerance cm3/1000s.       + : 4.0       Tolerance cm3/1000 strokes : 61.5       Tolerance cm3/1000 strokes : 61.5         Rated speed rpm       : 750       Shutoff solenoid Volt : 12       Check tolerance cm3/1000 str.       - : 2.3         Rated speed rpm       : 750       Shutoff solenoid Volt : 12       Check tolerance cm3/1000 str.       - : 2.3         Rated speed rpm       : 750       Shutoff solenoid Volt : 12       Aneroid pressure hPa : 2000 Aneroid pressure PPa : 1000	cm3/1000	str. +-	: 3.0	$\frac{1}{2}$	Tolerance		
Rated speed rpm : 2400	cm3/1000s	5. +-	: 4.0	<u> </u>	Check tolerance		
Aneroid pressure hPa : 1000 hPa : 1000 Del. quantity cm3/1000 strokes : 37.0 Check tolerance cm3/1000s. +: 4.0 Shutoff solenoid Volt : 12 Check tolerance cm3/1000s. +: 2.5 Rated speed rpm : 2700 Aneroid pressure hPa : 1000 Del. quantity cm3/1000str. +: 1.5 Check tolerance cm3/1000s. +: 2.5 Shutoff solenoid Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 strokes : 8.0 Tolerance cm3/1000 strokes : 61.5 Tolerance cm3/1000 strokes : 61.5 Tolerance cm3/1000 strokes : 61.5 Tolerance cm3/1000 strokes : 61.5 Tolerance cm3/1000 strokes : 61.5 Tolerance cm3/1000 strokes : 61.5 Tolerance cm3/1000 strokes : 61.5 Tolerance cm3/1000 strokes : 61.5 Tolerance cm3/1000 strokes : 61.5 Tolerance cm3/1000s. +: 0.5 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 400  LDA/ HBA stroke mm : 7,1 Del. quantity cm3/1000 strokes : 56.5 Tolerance cm3/1000s. +: 2.3 Shutoff solenoid Aneroid pressure hPa : 400  Aneroid pressure hPa : 2000 Aneroid pressure hPa : 1000				‡		:	12
Del. quantity cm3/1000 strokes : 37.0 Check tolerance cm3/1000s. +: 4.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2700 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 str. +: 1.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2700 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. +: 3.0 Check tolerance cm3/1000 strokes : 61.5 Check tolerance cm3/1000 strokes : 61.5 Check tolerance cm3/1000 strokes : 61.5 Check tolerance cm3/1000s. +: 4.0 Shutoff solenoid Volt : 12 Check tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000 str. +: 0.5 Shutoff solenoid Volt : 12 Check tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000 str.	Aneroid p			+		: 500	)
Check tolerance cm3/1000s. +: 4.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2700 Aneroid pressure hPa	Del. quar			‡	hPa	: 10	000
Shutoff solenoid  Volt : 12  Rated speed rpm : 2700  Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 str. +: 1.5  Shutoff solenoid  Volt : 12  Rated speed rpm : 1250  Aneroid pressure  hPa : 1000  Del. quantity  Check tolerance  cm3/1000 str. +: 3.0  Check tolerance  cm3/1000 str. +: 3.0  Check tolerance  cm3/1000 str. +: 0.5  Tolerance  Shutoff solenoid  Volt : 12  Rated speed rpm : 750  Aneroid pressure  hPa : 0.5  Check tolerance  cm3/1000 str. +: 0.5  Check tolerance  cm3/1000 str. +: 12  Rated speed rpm : 750  Aneroid pressure  hPa : 400  LDA/  HBA stroke mm : 7,1  Del. quantity  cm3/1000 strokes : 56.5  Aneroid pressure  hPa : 2000  Aneroid pressure  hPa : 1000	Check tol	.erance		Ī	cm3/1000 strokes	: 61	.5
Rated speed rpm : 2700  Aneroid pressure	Shutoff s			+	cm3/1000 str. +-	: 1	.5
Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 8.0  Tolerance cm3/1000 str. +: 3.0 Check tolerance cm3/1000s. +: 4.0 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 61.5 Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.3 Rated speed rpm : 750 Aneroid pressure hPa : 400  LDA/ HBA stroke mm : 7,1 Del. quantity cm3/1000 strokes : 56.5 Tolerance Cm3/1000 strokes : 2000 Aneroid pressure hPa : 2000 Aneroid pressure hPa : 1000	Rated spe	ed rom	: 2700	‡	cm3/1000s. +-	: 2	2.5
Tolerance cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. +: 3.0 Check tolerance cm3/1000s. +: 4.0 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 400  LDA/ HBA stroke mm : 7,1 Del. quantity cm3/1000 strokes : 56.5 Tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  MECHANICAL SHUTOFF  Rated speed rpm : 2000 Aneroid pressure hPa : 1000	Aneroid p			‡		:	12
cm3/1000 str. +:       3.0         Check tolerance       cm3/1000 strokes:       61.5         cm3/1000s. +:       4.0       Tolerance         Shutoff solenoid       cm3/1000 str. +:       0.5         Check tolerance       cm3/1000s. +:       2.3         Shutoff solenoid       Volt :       12         LDA/ HBA stroke mm :       7,1       MECHANICAL SHUTOFF         Del. quantity       Rated speed rpm :       2000         cm3/1000 strokes :       56.5       Aneroid pressure         Tolerance       hPa :       1000	cm3/1000	strokes	: 8.0	‡	Aneroid pressure		
cm3/1000s.       + : 4.0       + : 0.5         Shutoff solenoid       + : 0.5         Volt       : 12       - Check tolerance cm3/1000s.       + : 2.3         Rated speed rpm       : 750       - Shutoff solenoid       Volt       : 12         LDA/ HBA stroke mm       : 7,1       - MECHANICAL SHUTOFF         Del. quantity cm3/1000 strokes       : 56.5       - Aneroid pressure hPa       : 2000         Tolerance       - HPa       : 1000	cm3/1000	str. +	: 3.0	‡	Del. quantity		
Volt : 12 Check tolerance cm3/1000s. +-: 2.3  Rated speed rpm : 750 Shutoff solenoid  Aneroid pressure Volt : 12  hPa : 400  LDA/ HBA stroke mm : 7,1 Del. quantity Rated speed rpm : 2000 cm3/1000 strokes : 56.5  Tolerance Formal Tolerance Toleran	cm3/1000s	· +	: 4.0	‡	Tolerance		
Rated speed rpm : 750 Aneroid pressure hPa : 400  LDA/ HBA stroke mm : 7,1 Del. quantity cm3/1000 strokes : 56.5 Tolerance : 750  Shutoff solenoid Volt : 12  RECHANICAL SHUTOFF  Rated speed rpm : 2000 Aneroid pressure hPa : 1000		iol <b>eno</b> 1d	: 12	‡	Check tolerance		
hPa : 400  LDA/ HBA stroke mm : 7,1 Del. quantity			: 750	Ŧ	Shutoff solenoid		
HBA stroke mm : 7,1  Del. quantity + Rated speed rpm : 2000  cm3/1000 strokes : 56.5 + Aneroid pressure  Tolerance + hPa : 1000		ii essui e	: 400	Ī		•	1C
Del. quantity + Rated speed rpm : 2000 cm3/1000 strokes : 56.5 + Aneroid pressure Tolerance + hPa : 1000		e mm	: 7.1	1	MECHANICAL SHUTOFF		
Tolerance + hPa : 1000	Del. quan	itity		‡		: 2000	1
	Tolerance			‡		: 10	000

Del. quantity			
cm3/1000 strokes	:	1.5	
Tolerance			
cm3/1000 str. +	- :	1.5	
Check tolerance			
cm3/1000s. +	-:	1.5	
Shutoff solenoid	-		
Volt	:	12	
ELECTR. SHUTOFF			
CONTROL LEVER, II	NE 9	CTOD	
COMINGE FEACH'S TI	יווע	TOP	
Rated speed rpm		325	
Del. quantity	•	363	
cm3/1000 strokes	•	1.5	
Tolerance	•	1.0	
cm3/1000 str. +		1.5	
Check tolerance	•	1.7	
cm3/1000s. +		1.5	
CHD/ 10003.	•	1.5	
FULL-LOAD STOP CO	ONTRO	L LEVER	
Rated speed rpm	•	325	
Del. quantity			
cm3/1000 strokes	:	1.5	
Tolerance			
cm3/1000 str. $+$		1.5	
Check tolerance			
cm3/1000s. +-	- :	1.5	
IDLE DELIVERY			
IDLE DELIVERY			<u> </u>
Rated speed rpm	:	375	<del> </del>
Rated speed rpm Del. quantity	:		
Rated speed rpm Del. quantity cm3/1000 strokes	:	375 8.0	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	8.0	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	:		
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance	-:	8.0 3.0	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +-	- : - :	8.0	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid	-:	8.0 3.0 3.0	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +-	- : - :	8.0 3.0	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid	-:	8.0 3.0 3.0	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt	-:	8.0 3.0 3.0 12	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid	-:	8.0 3.0 3.0 12	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  EXHAUST-GAS RECIR	- : - : RCULA	8.0 3.0 3.0 12	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm	-:	8.0 3.0 3.0 12	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure	- : - : RCULA	8.0 3.0 3.0 12 TION 1000	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa	- : - : RCULA	8.0 3.0 3.0 12	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa Del. quantity	- : - : RCULA	8.0 3.0 3.0 12 TION 1000	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	- : - : RCULA	8.0 3.0 3.0 12 TION 1000	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	- : - : RCULA :	8.0 3.0 3.0 12 TION 1000 1000 25.5	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +	- : - : RCULA	8.0 3.0 3.0 12 TION 1000	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance	- : - : RCULA :	8.0 3.0 3.0 12 TION 1000 1000 25.5 0.5	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +	- : - : RCULA :	8.0 3.0 3.0 12 TION 1000 1000 25.5	

Shutoff	solenoid		
Volt		:	12

START TRANSITION

Rated speed rpm : 325
Del. quantity
cm3/1000 strokes : 40.5
Tolerance
cm3/1000 str. +: 3.5
Shutoff solenoid
Voit : 12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 7,1
Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 5,4
Tolerance mm + : +0,2
Dimension MS mm : 1,1
Tolerance mm + : +0,2

MICROSWITCH SET

mm : 0,8...3,0

: ARF 12,0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.06.96 Test oil : ISO 4113

Part no. : 0 460 414 159 Pump designation : VE4/11F2000R509-4

Customer-spec. information
Customer : ROVER
Motor : GEMINI 3
Power KW : 83.0

TEST BENCH REQUIREMENTS

Calibrating—cil

return

temperature °C : 55

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 116

Opening pressure

ber : 207 Tolerance bar + : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,45

Outlet : C

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1600

Aneroid pressure

hPa : 1000

Setting mm : 3.6 Tolerance mm +-: 0.2

Shutoff solenoid

Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 1600

Aneroid pressure

hPa : 1000

Supply pomp

pressure bar : 6.8
Tolerance bar +: 0.3

Shutoff solenoid

Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1400

Aneroid pressure

hPa : 1000

Del. quantity

cm3/1000 strokes : 66.2

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 4.0

Shutoff solenoid

Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 37.8

Tolerance

cm3/1000 str. + : 0.5

Shutoff solenoid

Volt : 24

Check tolerance

cm3/1000s. : 4.0

IDLE SETTING

Rated speed rpm : 350

Del. quantity	
cm3/1000 strokes : 11.5	- Rated speed rpm : 2000
Tolerance	- Aneroid pressure
cm3/1009 str. +: 2.0	- hPa : 1000
Shutoff solenoid	•
Volt : 24 Spread	- SV travel mm : 6.4
Spread	- Tolerance mm +-: 0.4
CMD/1000 Strokes : 4.0	- Check
Check tolerance	tolerance mm +-: 0.9
cm3/1000s. : 4.5	- Shutoff solenoid
+	- Volt : 24
+	•
+	- Rated speed rpm : 1400
<b>+</b>	- Aneroid pressure
FULL-LOAD SPEED REGULATION	- nPa : 1000
	•
Rated speed rpm : 2200	- SV travel mm : 2.1
Pressure hPa : 1000	- Tolerance mm +-: 0.4
Del. quantity	- Check
cm3/1000 strokes : 52.5	tolerance mm +-: 0.9
Tolerance	Shutoff solenoid
cm3/1000 str. +: 2.0	- Volt : 24
Shutoff solenoid	•
Volt : 24	SUPPLY PUMP PRESSURE CHARACTERISTIC
+	•
STARTING FUEL DELIVERY	- Rated speed rpm : 2000
<b>†</b>	- Aneroid pressure
Rated speed rpm : 100	- hPa : 1000
Del. quantity	- Supply pomp
cm3/1000 strokes : 98.0	pressure bar : 8.0
Tolerance	Tolerance bar +-: 0.3
cm3/1000 str. +: 1.0	- Shutoff solenoid
Shutoff solenoid	· Volt : 24
Volt : 24	•
+	- Rated speed rpm : 1400
SET GRADUATED STARTING DELIVERY	- Aneroid pressure
CONTROL LEVER, IDLE STOP	- hPa : 1000
<b>†</b>	- Supply pomp
Rated speed rpm : 2000	pressure bar : 6.1
Tolerance	Tolerance bar + : 0.3
cm3/1000 str. +-: 0.5	Shutoff solenoid
Shutoff solenoid	Volt : 24
Volt : 24 +	
CETTIALS COAD CTARTIALS FUEL AS THESE	Rated speed rpm : 1000
SETTING GRAD. STARTING FUEL DELIVERY	OVEREL OLI OLIANETTY
FULL-LOAD STOP CONTROL LEVER	OVERFLOW QUANTITY
Pated around ware . 100	Detail aread arm
Rated speed rpm : 100	Rated speed rpm : 500
Del. quantity + cm3/1000 strokes : 45.0 +	- Aneroid pressure - hPa : 1000
Tolerance	
cm3/1000 str. + : 1.0	Overflow quantity ccm/10s : 77.7
Shutoff solenoid	Tolerance : //./
Volt : 24	- ccm/10s + : 22.2
. 24	- CUII/ IUS: 22.2
1	·     Check tolerance
	146
INJECTION-PUMP TEST SPECIFICATIONS	ccm/1Us +-: 22.2 Shutoff solenoid
THOUGHTON FOUR FEST SCENTFLOWITONS	Volt : 24
TIMING DEVICE CHARACTERISTIC	
LINING ACATOC GHAWACIENTOLITA	

Rated speed rpm : 2000	† Check tolerance
Aneroid pressure	+ cm3/1000s. +-: 3.2
hPa : 1000 Overflow quantity	+ Shutoff solenoid + Volt : 24
ccm/10s : 125.0	† Volt : 24
Tolerance	Rated speed rpm : 2000
ccm/10s + : 41.6	+ Aneroid pressure
	+ hPa : 1000
Check tolerance	† Del. quantity
ccm/10s +: 47.6	+ cm3/1000 strokes : 65.2
Shutoff solenoid	+ Tolerance
Volt : 24	+ cm3/1000 str. +-: 2.0
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ Check tolerance + cm3/1000s. +-: 3.0
ACCTACK! MAN DUCHNAMA! CHMUNCICKTOITC	+ cm3/1000s. +-: 3.0 + Shutoff solenoid
Rated speed rpm : 2200	+ Volt : 24
Aneroid pressure	+
hPa : 1000	Rated speed rpm : 900
Del. quantity	† Aneroid pressure
cm3/1000 strokes : 52.5	† hPa : 1000
Tolerance	+ Del. quantity
cm3/1000 str. +-: 2.0 Check tolerance	+ cm3/1000 strokes : 63.3
cm3/1000s. +-: 4.5	+ Tolerance + cm3/1000 str. +-: 2.5
Shutoff solenoid	+ Check tolerance
Volt : 24	+ cm3/1000s. + : 4.0
, , ,	+ Shutoff solenoid
Rated speed rpm : 2400	+ Volt : 24
Aneroid pressure	+
hPa : 1000	+ Rated speed rpm : 1400
Lel. quantity	+ Aneroid pressure
cm3/1000 strokes : 16.0	+ hPa : 1000
Check tolerance cm3/1000s. ← : 6.0	+ Del. quantity
cm3/1000s. $\leftarrow$ : 6.0 Shutoff solenoid	+ cm3/1000 strokes : 66.2 + Tolerance
Volt : 24	+ cm3/1000 str. +-: 0.5
, 67	+ Check tolerance
Rated speed rpm : 2600	+ cm3/1000s. +-: 2.5
Aneroid pressure	+ Shutoff solenoid
hPa : 1000	† Volt : 24
Del. quantity	+
cm3/1000 strokes : 1.5	†
Tolerance cm3/1000 str. +-: 1.5	+ ELECTR. SHUTOFF
Check tolerance	CONTROL LEVER, IDLE STOP
cm3/1000s. +-: 1.5	T CONTROL LEVER, IDEE STOP
Shutoff solenoid	Rated speed rpm : 350
Volt : 24	+ Del. quantity
	+ cm3/1000 strokes : 1.5
Rated speed rpm : 800	+ Tolerance
Aneroid pressure	+ cm3/1000 str. +: 1.5
hPa : 300	+ Check tolerance + cm3/1000s. +-: 1.5
LDA/	+ Spread
HBA stroke mm : 6.4	- cm3/1000 strokes : 5.0
Del. quantity	+
cm3/1000 strokes : 48.0	FULL-LOAD STOP CONTROL LEVER
Tolerance	+
cm3/1000 str. +-: 0.5	+ Rated speed rpm : 350
	+

Del. quantity			
cm3/1000 strokes		1.5	
Tolerance			
cm3/1000 str. +- Spread	:	1.5	
cm3/1000 strokes Check tolerance	:	5.0	
cm3/1000s. +-	:	1.5	
Spread cm3/1000 strokes	:	5.0	
IDLE DELIVERY			
		500	
Del. quantity	:		
cm3/1000 strokes Tolerance	:	1.5	
cm3/1000 str. +-	:	1.5	
Check tolerance cm3/1000s. +-	:	1.5	
Shutoff solenoid Volt	:	24	
***************************************	•		
EXHAUST-GAS RECIR	CUL	ATION	
Rated speed rpm Aneroid pressure	:	1000	
hPa	:	1000	
Del. quantity	:		
cms/ (uuu strokes		39.0	
cm3/1000 strokes Tolerance		39.0	
		39.0 1.0	
Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-			
Tolerance cm3/1000 str. +- Check tolerance		1.0	
Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	:	1.0 3.0	
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt START TRANSITION	•	1.0 3.0 24	
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity	•	1.0 3.0 24 350	
Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	•	1.0 3.0 24 350 50.0	
Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	•	1.0 3.0 24 350	
Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	•	1.0 3.0 24 350 50.0	
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid	•	1.0 3.0 24 350 50.0 20.0	
Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  Rated speed rpm	•	1.0 3.0 24 350 50.0 20.0	
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes	•	1.0 3.0 24 350 50.0 20.0	
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance Cm3/1000 strokes Tolerance	•	1.0 3.0 24 350 50.0 20.0 24 200 115.0	
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid	•	1.0 3.0 24 350 50.0 20.0 24 200 115.0 25.0	
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	•	1.0 3.0 24 350 50.0 20.0 24 200 115.0	

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 6.4
Dimension K mm : 7,3
Tolerance mm + : +-0,1
Dimension KF mm : 8,4
Tolerance mm + : +-0,2
MS1 dimension mm : 1,45
Tolerance mm + : +0,15/-0,1

POTENTIOMETER SET

1. measurement

voltage Volt : 5.0 1. measurement

voltage Volt : 3,1

MICROSWITCH SET

: ARF 12,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 42,3..46,3

Control Lever

position YB mm : 50,0..61,0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 27.09.95 Test oil : 180 4113

Part no. : 0 460 494 341 Pump designation : VE4/9F2250P513

Customer—spec. information Customer : PSA Motor : XUD 9 T

Motor : XUD 9 TF-Y
Power KW : 67.0

## TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C +-- : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

# BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm + : +-0,02
Outlet : A

# INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure

hPa : 1000

Setting mm : 3.6 Tolerance mm +-: 0.2 Shutoff solenoid

# SUPPLY PUMP PRESSURE

Volt

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 5.6
Tolerance bar +-: 0.3
Shutoff solenoid
Volt : 12

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

12

Rated speed rpm : 1250 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +-: 0.5 Spread cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid Volt 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 37.0
Tolerance
cm3/1000 str. +-: 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000s. : 3.0

		l bal marata.
HOUSING-FIXED IDL	E CODING	+ Del. quantity + cm3/1000 strokes : 53.0
RESIDUAL QUANTITY		Tolerance
KESTDAL GOMATTI	2E I I IIAG	+ cm3/1000 str. + : 3.0
Rated speed rpm	: 490	Shutoff solenoid
Del. quantity	. 470	+ Volt : 12
cm3/1000 strokes	: 8.5	I voct . 12
Tolerance	. 0.5	I
cn/3/1000 str. +	: 0.5	LOAD-DEPENDENT START OF DELIVERY
Shutoff solenoid		+ SETTING
Volt	: 12	1 OETTING
		DELIVERY DIFFERENCE
IDLE DELIVERY		DECITE TO THE PERSON
		Rated speed rpm : 1250
Rated speed rpm	: 440	+ Del. quantity
Del. quantity		+ cm3/1000 strokes : -10.0
cm3/1000 strokes	: 16.0	+ Tolerance
Tolerance		+ cm3/1000 str. + : 1.0
cm3/1000 str. +-	: 1.0	+ Shutoff solenoid
Spread		+ Volt : 12
cm3/1000 strokes	: 2.0	+
Shutoff solenoid		PRESSURE DIFFERENCE
Volt	: 12	+
		Rated speed rpm : 1250
HIGH IDLE SETTING		+ Del. quantity
		+ cm3/1000 strokes : -0.2
Rated speed rpm	: 490	+ Tolerance
Del. quantity		+ cm3/1000 str. +→: 0.1
cm3/1000 strokes	: 16.0	+ Shutoff solenoid
Tolerance		+ Volt : 12
cm3/1000 str. +	: 1.0	+
Shutoff solenoid		+ TIMING-DEVICE TRAVEL DIFFERENCE
Volt	: 12	+
		+ Rated speed rpm : 1250
FULL-LOAD SPEED RI	EGULATION	+ Del. quantity
Bahad wasad was	. 2575	→ cm3/1000 strokes : -1.0
Rated speed rpm	: 2575	+ Tolerance
Pressure hPa	: 1000	+ cm3/1000 str. $+$ : 0.1
Del. quantity	. 1/ 0	+ Shutoff solenoid
cm3/1000 strokes Tolerance	: 14.0	† Volt : 12
cm3/1000 str. +-	: 2.0	Ĩ
Shutoff solenoid	. 2.0	INJECTION-PUMP TEST SPECIFICATIONS
Volt	: 12	TIMECITOR LOUIL 1531 SECTETOWITONS
7000	• • •	TIMING DEVICE CHARACTERISTIC
STARTING FUEL DELE	[VERY	The service of the se
		Rated speed rpm : 2000
Rated speed rpm	: 150	- Aneroid pressure
Del. quantity		+ hPa : 1000
cm3/1000 strokes	: 52.0	+
Tolerance		+ SV travel mm : 6.5
cm3/1000 str. +-	: 15.0	Tolerance mm +: 0.4
Shutoff solenoid		+ Check
Volt	: 12	tolerance mm +: 0.7
		+ Shutoff solenoid
SET GRADUATED STAF		+ Volt : 12
CONTROL LEVER, IDL	LE STOP	†
0.4.4	. 200	+ Rated speed rpm : 750
Rated speed rpm	: 200	+ Aneroid pressure
		+ hPa : 1000

	+ Rated speed rpm : 2575
SV travel mm : 1.5	+ Aneroid pressure
Tolerance mm +: 0.4 Check	+ hPa : 1000 + Del. quantity
tolerance mm +-: 0.7	cm3/1000 strokes : 14.0
Shutoff solenoid Volt : 12	+ Tolerance
Volt : 12	+ cm3/1000 str. + : 2.0 + Check tolerance
Rated speed rpm : 1250	+ cm3/1000s. $+$ : 4.0
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Shutoff solenoid + Volt : 12
SOFFET FORF TRESSORE CHARACTERISTIC	1 12
Rated speed rpm ; 2000	Rated speed rpm : 2375
Aneroid pressure hPa : 1600	+ Aneroid pressure + hPa : 1000
Supply pomp	+ Del. quantity
pressure bar : 7.5 Tolerance bar +-: 0.3	+ cm3/1000 strokes : 39.0 + Tolerance
Shutoff solenoid	+ cm3/1000 str. +-: 5.0
Volt : 12	+ Check tolerance
Rated speed rpm : 750	+ cm3/1000s. +-: 6.0 + Shutoff solenoid
Aneroid pressure	Volt : 12
hPa : 1000 Supply pomp	Potent around any 2750
pressure bar : 4.3	+ Rated speed rpm : 2750 + Aneroid pressure
Tolerance bar + : 0.3	+ hPa : 1000
Shutoff solenoid Volt : 12	+ Del. quantity + cm3/1000 strokes : 3.0
	Tolerance
OVERFLOW QUANTITY	+ cm3/1000 str. +-: 3.0
Rated speed rpm : 2150	+ Check tolerance + cm3/1000s. + : 3.0
Aneroid pressure	+ Shutoff solenoid
hPa : 1000 Overflow quantity	† Volt : 12
ccm/10s : 97.2	Rated speed rpm : 750
Tolerance ccm/10s +-: 41.6	+ Aneroid pressure + hPa : 350
	Del. quantity
Check tolerance	+ cm3/1000 strokes : 46.0
ccm/10s + : 41.6 Shutoff solenoid	<pre>† Tolerance + cm3/1000 str. ←: 0.5</pre>
Volt : 12	+ Check tolerance
Rated speed rpm : 500	cm3/1000s. +-: 3.0 Shutoff solenoid
Aneroid pressure	+ Volt : 12
hPa : 1000 Overflow quantity	Rated speed rpm : 2150
ccm/10% : 63.8	Aneroid pressure
Tolerance	+ hPa : 1000
ccm/10s + : 22.2	+ Del. quantity + cm3/1000 strokes : 50.1
Check tolerance	Tolerance
ccm/10s + : 22.2 Shutoff solenoid	+ cm3/1000 str. +-: 1.0 + Check tolerance
Volt : 12	+ cm3/1000s. $+$ : 2.2
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ Shutoff solenoid + Volt : 12
PECTAERI WAN DUENUMMAI CHARACIEKT211C	+ voi: : 12
	•

Rated speed rpm : 2000 Aneroid pressure	+ Check tolerance + cm3/1000s. +-: 1.5
hPa : 1000	+
Del. quantity cm3/1000 strokes : 52.0	FULL-LOAD STOP CONTROL LEVER
Tolerance cm3/1000 str. +-: 1.0	+ Rated speed rpm : 440 + Del. quantity
Check tolerance cm3/1000s. +-: 2.2	+ cm3/1000 strokes : 1.5 Tolerance
Shutoff solenoid Volt : 12	+ cm3/1000 str. +-: 1.5 + Check tolerance
Rated speed rpm : 500 Ameroid pressure	+ cm3/1000s. +-: 1.5
hPa : 1000 Del. quantity	<del>-</del>
cm3/1000 strokes : 48.3 Tolerance	<u> </u>
cm3/1000 str. + : 1.5 Check tolerance	CHECKING LOAD-DEPENDENT START OF DELIVERY
cm3/1000s. +: 3.0 Shutoff solenoid	DELIVERY DIFFERENCE
Volt : 12	Rated speed rpm : 1250
Rated speed rpm : 1250 Aneroid pressure hPa : 1000	+ Del. quantity + cm3/1000 strokes : -13.0
Del. quantity cm3/1000 strokes : 54.0	+ Tolerance + cm3/1000 str. +-: 2.0 + Check tolerance
Tolerance cm3/1000 str. + : 0.5	cm3/1000s. +-: 5.0  Shutoff solenoid
Check tolerance cm3/1000s. +-: 2.2	Volt : 12
Shutoff solenoid Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE
	Rated speed rpm : 1250 Del. quantity
MECHANICAL SHUTOFF	cm3/1000 strokes : -1.0
Rated speed rpm : 2000 Aneroid pressure	cm3/1000 str. +-: 0.1
hPa : 1000 Del. quantity	+ cm3/1000s. + : 0.1 + Shutoff solenoid
cm3/1000 strokes : 1.5 Tolerance	+ Volt : 12
cm3/1000 str. + : 1.5 Check tolerance	DELIVERY DIFFERENCE
cm3/1000S. ←: 1.5 Shutoff solenoid	+ Rated speed rpm : 1250 + Del. quantity
Volt : 12	t cm3/1000 strokes : 5.0 Tolerance
ELECTR. SHUTOFF	+ cm3/1000 str. +-: 3.0 + Check tolerance
CONTROL LEVER, IDLE STOP	+ cm3/1000s. +-: 3.0 + Shutoff solenoid
Rated speed rpm : 440 Del. quantity cm3/1000 strokes : 1.5	Volt : 12  PRESSURE DIFFERENCE
Tolerance	+
cm3/1000 str. + : 1.5	+ Rated speed rpm : 1250

Supply pomp

-1.1 pressure bar Tolerance bar +-: 0.2

Shutoff solenoid

Volt 12

# TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250 Tolerance mm +: 0.2

Check

0.7 tolerance mm +:

Shutoff solenoid

Volt 12

# EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1250

Aneroid pressure

hPa 1000

Del. quantity

cm3/1000 strokes : 17.8

Tolerance

cm3/1000 str. +:1.0

Check tolerance cm3/1000s. +-: 4.0

Shutoff solenoid

12 Volt

# START TRANSITION

Rated speed rpm : 380

Del. quantity

cm3/1000 strokes : 35.0

Tolerance

cm3/1000 str. +-: 10.0

Shutoff solenoid

12 Volt

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm +:+0,1Dimension KF mm : 6,0 Tolerance mm +: +-0,2 Dimension MS mm : 1,2

Tolerance mm + : +0,2

#### MICROSWITCH

SET

: 0,8...3,0 mm

: ARF 12,0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 27.09.95 Edition Test oil : ISO 4113

Part no. : 0 460 494 371 Pump designation : VE4/9F2250R513-1

Customer-spec. information

: PSA Customer : XUD 9 TF/Y Motor Power KW 66.0

# TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance \*C + :

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance ber +-:

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

bar Tolerance bar +-:

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

## REMARKS

# BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 0.3 Tolerance mm +-: +-0,02 Outlet : A

# INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250 Aneroid pressure

hPa 1000

Setting mm 3.6 Tolerance mm +-: 0.2 Shutoff solenoid

Volt 12

# SUPPLY PUMP PRESSURE

Rated speed rpm : 1250 Aneroid pressure

hPa 1000

Supply pomp

pressure bar 5.6 Tolerance bar +-: 0.3 Shutoff solenoid

Volt 12

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250 Aneroid pressure 1000

Del. quantity cm3/1000 strokes : 54.0 Tolerance

cm3/1000 str. +-:0.5 Spread

cm3/1000 strokes : 2.0

Check tolerance cm3/1000s. 3.0 Shutoff solenoid

Volt 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

0.5

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 37.0

Tolerance

cm3/1000 str. +-: Shutoff solenoid

Volt 12

Check tolerance

cm3/1000s.3.0

1	Dal manda.
HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 str. + : 0.5	Del. quantity cm3/1000 strokes : 53.0 Tolerance
Rated speed rpm : 490	cm3/1000 str. +-: 3.0 Shutoff solenoid
Del. quantity cm3/1000 strokes : 8.5	Volt : 12
Tolerence cm3/1000 str. + : 0.5	LOAD DEDCHIDCHT OTABL OF BELLUEDY
Shutott solehold +	LOAD-DEPENDENT START OF DELIVERY SETTING
Volt : 12	DELIVERY DIFFERENCE
IDLE DELIVERY	0.4. 1
Rated speed rpm : 440	Rated speed rpm : 1250 Del. quantity
Del. quantity cm3/1000 strokes : 16.0	cm3/1000 strokes : -10.0 Tolerance
Tolerance + cm3/1600 str. →: 1.0 +	cm3/1000 str. +-: 1.0 Shutoff solenoid
Spread cm3/1000 strokes : 2.0	Volt : 12
Shutoff solenoid	PRESSURE DIFFERENCE
HIGH IDLE SETTING +	Rated speed rpm : 1250 Del. quantity
Rated speed rpm : 490	cm3/1000 strokes : -0.2 Tolerance
Del. quantity + cm3/1000 strokes : 16.0 +	cm3/1000 str. +- : 0.1 Shutoff solenoid
Tolerance + : 1.0 +	Volt : 12
Shutoff solenoid + Volt : 12 +	TIMING-DEVICE TRAVEL DIFFERENCE
FULL-LOAD SPEED REGULATION +	Rated speed rpm : 1250 Del. quantity
<b>1</b>	cm3/1000 strokes : -1.0
Rated speed rpm : 2575 + Pressure hPa : 1000 +	Tolerance cm3/1000 str. +-: 0.1
Del. quantity	Shutoff solenoid
cm3/1000 strokes : 14.0	Volt : 12
cm3/1000 str. +-: 2.0	
Shutoff solenoid + Volt : 12 +	INJECTION-PUMP TEST SPECIFICATIONS
STARTING FUEL DELIVERY +	TIMING DEVICE CHARACTERISTIC
Rated speed rpm : 150 +	Rated speed rpm : 2000 Aneroid pressure
Del. quantity + cm3/1000 strokes : 52.0 +	hPa : 1000
Tolerance + : 15.0	SV travel mm : 6.5 Tolerance mm +- : 0.4
Shutoff solenoid +	Check
Volt : 12	tolerance mm +: 0.7 Shutoff solenoid
SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP	Volt : 12
Rated speed rpm : 200	Rated speed rpm : 750 Aneroid pressure
<del>+</del>	hPa : 1000

	ń		
SV travel mm : 1.5	†	Aneroid pressure	4000
SV travel mm : 1.5 Tolerance mm +-: 0.4	Ī	hPa : Del. quantity	1000
Check	I	cm3/1000 strokes :	14.G
tolerance mm +-: 0.7	+	Tolerance	17.0
Shutoff solenoid	+	cm3/1000 str. +:	2.0
Volt : 12	+	Check tolerance	
SUPPLY PUMP PRESSURE CHARACTER	Terre +	cm3/1000s. +-:	4.0
SUPPLY PUMP PRESSURE CHARACTER	1	Shutoff solenoid Volt :	12
Rated speed rpm : 2000	Ţ		16
Aneroid pressure	+	Rated speed rpm :	2375
hPa : 1000	+	Aneroid pressure	
Supply pomp	†	hPa :	1000
pressure bar : 7.5 Tolerance bar +-: 0.3	Ī	Det. quantity cm3/1000 strokes :	39.0
Shutoff solenoid	Ţ	Tolerance	37.0
Volt : 12	ļ	cm3/1000 str. +:	5.0
	+	Check tolerance	
Rated speed rpm : 750	†	cm3/1000s. +-:	6.0
Aneroid pressure hPa : 1000	1	Shutoff solenoid Volt :	12
Supply pomp	Ţ		12
pressure bar : 4.3	+	Rated speed rpm :	2750
Tolerance bar + : 0.3	+	Aneroid pressure	
Shutoff solenoid Volt : 12	†	hPa :	1000
Volt : 12	Ī	Del. quantity cm3/1000 strokes :	3.0
OVERFLOW QUANTITY	Ţ	Tolerance	2.0
	+	cm3/1000 str. +-:	3.0
Rated speed rpm : 2150	+	Check tolerance	
Aneroid pressure hPa : 1000	†	cm3/1000s. +-:	3.0
Overflow quantity	Ī	Shutoff solenoid Volt :	12
ccm/10s : 97.2	Ţ		12
Tolerance	+	Rated speed rpm :	750
ccm/10s +-: 41.6	+	Aneroid pressure	
Check tolerance	†	hPa :	350
ccm/10s +-: 41.6	I	LDA/	
Shutoff solenoid	+	HBA stroke mm :	5,9
Volt : 12	+	Del. quantity	•
Potent amond annual 500	†	cm3/1000 strokes :	46.0
Rated speed rpm : 500 Aneroid pressure	1	Tolerance cm3/1000 str. +-:	0.5
hPa : 1000	I	Check tolerance	0.5
Overflow quantity	1	cm3/1000s. +-:	3.0
ccm/10s : 63.8	+	Shutoff solenoid	
Tolerance	†	Volt :	12
ccm/10s +-: 22.2	1	Rated speed rpm :	2150
Check tolerance	I	Aneroid pressure	2100
ccm/10s + : 22.2	+	hPa :	1000
Shutoff solenoid	+	Del. quantity	
Volt : 12	†	cm3/1000 strokes :	50.1
DELIVERY AND BREAKAWAY CHARACT	FRISTIC I	Tolerance cm3/1000 str. +-:	1.0
DECEMBER OF STREET		Check tolerance	1.0
Rated speed rpm : 2575	+	cm3/1000s. +-:	2.2
	+		

Shutoff solenoid Volt : 12	+ Del. quantity + cm3/1000 strokes : 1.5
Date of any order of any	+ Tolerance
Rated speed rpm : 2000 Aneroid pressure	+ cm3/1000 str. +-: 1.5 + Check tolerance
hPa : 1000 Del. quantity	cm3/1000s. +-: 1.5
cm3/1000 strokes : 52.0 Tolerance	FULL-LOAD STOP CONTROL LEVER
cm3/1000 str. +-: 1.0 Check tolerance	Rated speed rpm : 440  Del. quantity
cm3/1000s. +-: 2.2 Shutoff solenoid	+ cm3/1000 strokes : 1.5 + Tolerance
Volt : 12	cm3/1000 str. +-: 1.5
Rated speed rpm : 500 Aneroid pressure	cm3/1000s. +: 1.5
hPa : 1000 Del. quantity	1
cm3/1000 strokes : 48.3 Tolerance	
cm3/1000 str. +: 1.5	
Check tolerance cm3/1000s. +: 3.0 Shutoff solenoid	CHECKING LOAD-DEPENDENT START OF DELIVERY
volt : 12	DELIVERY DIFFERENCE
Rated speed rpm : 1250 Aneroid pressure	Rated speed rpm : 1250
hPa : 1000	Del. quantity cm3/1000 strokes : -13.0
Del. quantity cm3/1000 strokes : 54.0	+ Tolerance + cm3/1000 str. +-: 2.0
Tolerance	+ Check tolerance
cm3/1000 str. +: 0.5 Check tolerance	+ cm3/1000s. +-: 5.0 + Shutoff solenoid
cm3/1000s. +-: 2.2	+ Volt : 12
Shutoff solenoid Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE
	+
MECHANICAL SHUTOFF	+ Rated speed rpm : 1250 + Del. quantity
Rated speed rpm : 2000	+ cm3/1000 strokes : -1.0 + Tolerance
Aneroid pressure hPa : 1000	+ cm3/1000 str. +: 0.1 + Check tolerance
Del. quantity	+ cm3/1000s. +-: 0.1
cm3/1000 strokes : 1.5 Tolerance	+ Shutoff solenoid + Volt : 12
cm3/1000 str. + : 1.5 Check tolerance	+ DELIVERY DIFFERENCE
cm3/1000s. +: 1.5	+
Shutoff solenoid Volt : 12	+ Rated speed rpm : 1250 + Del. quantity
	cm3/1000 strokes : 5.0  Tolerance
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	cm3/1000 str. +-: 3.0 Check tolerance
	+ cm3/1000s. +-: 3.0
Rated speed rpm : 440	+ Shutoff solenoid + Volt : 12

## PRESSURE DIFFERENCE

Rated speed rpm : 1250

Supply pomp

pressure bar : -1.1 Tolerance bar +-: 0.2

Shutoff solenoid

Volt : 12

# TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm + : 0.2

Check

tolerance mm +-: 0.7

Shutoff solenoid

Volt : 12

### EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1250

Aneroid pressure

hPa : 1000

Del. quantity

cm3/1000 strokes : 23.8

Tolerance

cm3/1000 str. + : 1.0

Check tolerance

+ : 4.0

Shutoff solenoid

Volt : 12

# START TRANSITION

Rated speed rpm : 380

Del. quantity

cm3/1000 strokes : 35.0

Tolerance

cm3/1000 str. + : 10.0

Shutoff solenoid

Volt : 12

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 5,9

Dimension K mm : 3,3

Tolerance mm +: +0,1 Dimension KF mm : 6,0

Tolerance mm + : +-0,2

Dimension MS mm : 1,3

Tolerance mm + : + 0.2

MICROSWITCH SET

1

: 0,8...3,0 : ARF 12,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 28,8..32,8

Control lever

position YB mm : 69,2..80,8

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 27.09.95 Test oil : ISO 4113

Part no. : 0 460 494 383 Pump designation : VE4/9F2250R513-2

Customer-spec. information Customer : PSA

Motor : XUD 9 TF-Y Fower KW : 66.0

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction ram : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

# TIMING DEVICE TRAVEL

Rated speed rpm Aneroid pressure	:	1250
hPa	:	1000
Setting mm Tolerance mm +- Shutoff solenoid	:	3.6 0.2
Volt	•	12

# SUPPLY PUMP PRESSURE

Rated speed rpm	:	1250
Aneroid pressure		
hPa	:	1000
Supply pomp		
pressure bar	:	5.6
Tolerance bar +-	:	0.3
Shutoff solenoid		
Volt	:	12

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm	:	1250
Aneroid pressure		
hPa	:	1000
Del. quantity		
cm3/1000 strokes	:	54.0
Tolerance		
cm3/1000 str. +-	:	0.5
Spread		
cm3/1000 strokes	:	2.0
Check tolerance		
cm3/1000s.	:	3.0
Shutoff solenoid		
Volt	:	12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm	:	500
Del. quantity cm3/1000 strokes	:	37.0
Tolerance cm3/1000 str. +-	:	0.5
Shutoff solenoid Volt	•	12
Check tolerance	•	12
cm3/1000s.	:	3.0

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm Del. quantity	:	490
cm3/1000 strokes	:	8.5
Tolerance cm3/1000 str. +-	:	0.5

Shutoff solenoid Volt	: 12 ‡	NEL TUEDY ATTECDENCE
	· '2	DELIVERY DIFFERENCE
1DLE DELIVERY	1	Rated speed rpm : 1250 Del. quantity
Rated speed rpm Del. quantity	: 440	cm3/1000 strokes : -10.0 Tolerance
cm3/1000 strokes Tolerance	: 16.0	cm3/1000 str. +-: 1.0 Shutoff solenoid
cm3/1000 str. +- Spread	: 1.0	Volt : 12
cm3/1000 strokes Shutoff solenoid	: 2.0	PRESSURE DIFFERENCE
Volt	: 12	Rated speed rpm : 1250 Del. quantity
HIGH IDLE SETTING	‡	cm3/1000 strokes : -0.2 Tolerance
Rated speed rpm Del. quantity	: 490	cm3/1000 str. ←: 0.1 Shutoff solenoid
cm3/1000 strokes Tolerance	: 16.0	Voit : 12
cm3/1000 str. + Shutoff solenoid	+	TIMING-DEVICE TRAVEL DIFFERENCE
Volt	: 12	Rated speed rpm : 1250 Del. quantity
FULL-LOAD SPEED R	+	cm3/1000 strokes : -1.0 Tolerance
Rated speed rpm Pressure hPa		cm3/1000 str. +-: 0.1 Shutoff solenoid
Del. quantity cm3/1000 strokes	: 14.6	Volt : 12
Tolerance cm3/1000 str. +-	: 2.0	INJECTION-PUMP TEST SPECIFICATIONS
Shutoff solenoid	1	
Volt	: 12	TIMING DEVICE CHARACTERISTIC
STARTING FUEL DEL	IVERY	Rated speed rpm : 2000 Aneroid pressure
Rated speed rpm Del. quantity	: 150	hPa : 1000
cm3/1000 strokes Tolerance	: 52.0	SV travel mm : 6.5 Tolerance mm +-: 0.4
cm3/1000 str. +- Shutoff solenoid		Check tolerance mm +-: 0.7
Volt	: 12	Shutoff solenoid Volt : 12
SET GRADUATED STAIL CONTROL LEVER, IDI		Rated speed rpm : 750
·	+	Aneroid pressure
Rated speed rpm Del. quantity	1	hPa : 1000
cm3/1000 strokes Tolerance	+	SV travel mm : 1.5 Tolerance mm + : 0.4
cm3/1000 str. +- Shutoff solenoid	<del>}</del>	Check tolerance mm + : 0.7
Volt	: 12	Shutoff solenoid Volt : 12
LOAD-DEPENDENT STA	ART OF DELIVERY	SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm Aneroid pressure	: 2000		1.	Rated speed rpm :	2375
hPa	: 1000		Ŧ	Aneroid pressure hPa :	1000
pressure bar	: 7.5		‡	Del. quantity cm3/1000 strokes :	39.0
Tolerance bar +- Shutoff solenoid			‡	Tolerance cm3/1000 str. +:	5.0
Volt	: 12		‡	Check tolerance cm3/1000s. +-:	6.0
Rated speed rpm Aneroid pressure	: 750		‡	Shutoff solenoid Volt :	12
hPa Supply pomp	: 1000		‡	Rated speed rpm :	2750
pressure bar	: 4.3		1	Aneroid pressure	
Tolerance bar +-	: 0.3		+	hPa :	1000
Shutoff solenoid			+	Del. quantity	
Volt	: 12		+	cm3/1000 strokes :	3.0
OUEDELOU OLIANTITY			†	Tolerance	7.0
OVERFLOW QUANTITY			†	cm3/1000 str. +-:	3.0
Rated speed rpm	: 2150		I	cm3/1000s. + :	3.0
Aneroid pressure	. 2130		I	Shutoff solenoid	3.0
hPa	: 1000		1	Volt :	12
Overflow quantity			+		_
ccm/10s	: 97.2		+	Rated speed rpm :	750
Tolerance			+	Aneroid pressure	
ccm/10s +-	: 41.6		†	hPa :	350
Check tolerance			†	LDA/	
ccm/10s +-	: 41.6		Ī	HBA stroke mm :	5,9
Shutoff solenoid	. 41.0		I	Del. quantity	2,7
Volt	: 12		1	cm3/1000 strokes :	46.0
			+	Tolerance	
Rated speed rpm	: 500		+	cm3/1000 str. +-:	0.5
Aneroid pressure	1000		+	Check tolerance	
hPa	: 1000		+	cm3/1000s. +-:	3.0
Overflow quantity	: 63.8		†	Shutoff solenoid	13
ccm/10s Tolerance	. 03.0		Ť	Volt :	12
ccm/10s +	: 22.2		I	Rated speed rpm :	2150
			1	Aneroid pressure	2,50
Check tolerance			+	hPa :	1000
ccm/10s +	: 22.2		+	Del. quantity	
Shutoff solenoid Volt	: 12		<b>†</b>	cm3/1000 strokes : Tolerance	50.1
•••			+	cm3/1000 str. + :	1.0
DELIVERY AND BREAK	KAWAY CHARA	CTERISTIC	+	Check tolerance	
	2575		+	cm3/1000s. +:	2.2
Rated speed rpm	: 2575		+	Shutoff solenoid	40
Aneroid pressure hPa	: 1000		†	Volt :	12
Del. quantity	. 1000		I	Rated speed rpm :	2000
cm3/1000 strokes	: 14.0		1	Aneroid pressure	2000
Tolerance			+	hPa :	1000
cm3/1000 str. +-	: 2.0		+	Del. quantity	
Check tolerance			†	cm3/1000 strokes :	52.0
cm3/1000s. +- Shutoff solenoid	: 4.0			Tolerance cm3/1000 str. +-:	1.0
Volt	: 12			Check tolerance	1.0
,000	- 12			cm3/1000s. +-:	2.2
			'	= = = = •	

Shutoff solenoid Volt :	12 ‡	Tolerance cm3/1000 str. +-:	1.5
Rated speed rpm :	500	Check tolerance cm3/1000S. +-:	1.5
Aneroid pressure hPa :	1000		
Del. quantity cm3/1000 strokes :	48.3		
Tolerance cm3/1000 str. +-:	1.5		
Check tolerance cm3/1000s. +-:	3.0	CHECKING LOAD-DEPEND START OF DELIVERY	ENT
Shutoff solenoid Volt :	12	DELIVERY DIFFERENCE	
Rated speed rpm : Aneroid pressure	1250	Rated speed rpm : Del. quantity	1250
hPa : Del. quantity	1000	cm3/1000 strokes : Tolerance	-13.0
cm3/1000 strokes : Tolerance	54.0	cm3/1000 str. +- : Check tolerance	2.0
cm3/1000 str. +-: Check tolerance	0.5	cm3/1000s. +-: Shutoff solenoid	5.0
cm3/1000S. + : Shutoff solenoid	2.2	Volt :	12
Volt :	12	TIMING-DEVICE TRAVEL	DIFFERENCE
MECHANICAL SHUTOFF	+	Rated speed rpm : Del. quantity	
Rated speed rpm :	2000 +	cm3/1000 strokes : Tolerance	-1.0
Aneroid pressure	1000	cm3/1000 str. +-: Check tolerance	0.1
Del. quantity cm3/1000 strokes :	1.5	cm3/1000s. +: Shutoff solenoid	0.1
Tolerance cm3/1000 str. +-:	1.5	Volt :	12
Check tolerance	+	DELIVERY DIFFERENCE	
cm3/1000s. +-: Shutoff solenoid Volt :	1.5	Rated speed rpm :	1250
· · · · · · · · · · · · · · · · · · ·	12 +	Del. quantity cm3/1000 strokes : Tolerance	5.0
ELECTR. SHUTOFF CONTROL LEVER, IDLE STO	OB I	cm3/1000 str. + : Check tolerance	3.0
Rated speed rpm :	440	cm3/1000s. + : Shutoff solenoid	3.0
Del. quantity cm3/1000 strokes :	1.5	Volt :	12
Tolerance cm3/1000 str. +-:	1.5	PRESSURE DIFFERENCE	
Check tolerance cm3/1000s. +-:	1.5	Rated speed rpm : Supply pomp	1250
	+	pressure bar :	
FULL-LOAD STOP CONTROL	+	Shutoff solenoid	0.2
Del. quantity	440	Volt :	12
cm3/1000 strokes :	1.5	TIMING-DEVICE TRAVEL	DIFFERENCE
	•		

Rated speed rpm : 1250 Tolerance mm +-: 0.2

Check

tolerance mm 0.7

Shutoff solenoid

Volt 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1250

Aneroid pressure

hPa 1000

Del. quantity

cm3/1000 strokes : 17.8

Tolerance

cm3/1000 str. + :1.0

Check tolerance

cm3/1000s. 4.0

Shutoff solenoid

Volt 12

START TRANSITION

Rated speed rpm 380

Del. quantity cm3/1000 strokes : 35.0

Tolerance

cm3/1000 str. +:10.0

Shutoff solenoid

Volt 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm 5,9

: 3,3 Dimension K mm Tolerance mm + : +-0,1

Dimension KF mm : 6,0

Tolerance mm + : + -0.2

: 1,3 Dimension MS mm

Tolerance mm + : +-0,2

**MICROSWITCH** 

SET

: 0,8...3,0 П(T)

: ARF 12,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 28,8..32,8 Control lever

position YB mm : 69,2..80,8

End of test-specification sheet

L01

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 27,09,95 : ISO 4113

Part no.

: 0 460 494 384

Pump designation : VE4/9F2250R513-3

Customer-spec. information

Customer Motor

: PSA : XUD 9 TF/Y

Power KW

66.0

# TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature \*C : Tolerance \*C +:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar ←: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

Tolerance bar + :

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : Aneroid pressure

1000

Setting mm 3.6 Tolerance mm +-: 0.2 Shutoff solenoid Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Aneroid pressure hPa

Supply pomp pressure bar 5.6 Tolerance bar +: 0.3

Shutoff solenoid

Volt 12

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

1000

Rated speed rpm : 1250 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. + : 0.5Spread

cm3/1000 strokes : 2.0 Check tolerance

cm3/1000s. 3.0 Shutoff solenoid

Volt 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 37.0

Tolerance

cm3/1000 str. + :Shutoff solenoid Volt 12

Check tolerance cm3/1000s. 3.0

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490 Del. quantity cm3/1000 strokes :

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid	+
Volt : 12	+ DELIVERY DIFFERENCE
	+
IDLE DELIVERY	+ Rated speed rpm : 1250
	+ Del. quantity
Rated speed rpm : 440	+ cm3/1000 strokes : -10.0
Del. quantity	+ Tolerance
cm3/1000 strokes : 16.0	+ cm3/1000 str. $+$ : 1.0
Tolerance	- Shutoff solenoid
cm3/1000 str. +-: 1.0	+ Volt : 12
Spread	1
cm3/1000 strokes : 2.0	+ PRESSURE DIFFERENCE
Shutoff solenoid	T THEODORE DITTERENCE
Volt : 12	Rated speed rpm : 1250
. 12	
HIGH IDLE SETTING	+ Del. quantity
HIGH INCE SELLING	+ cm3/1000 strokes : -0.2
Detrod around non	+ Tolerance
Rated speed rpm : 490	+ cm3/1000 str. + : 0.1
bel. quantity	+ Shutoff solenoid
cm3/1000 strokes : 16.0	† Volt : 12
Tolerance	
cm3/1000 str. + : 1.0	+ TIMING-DEVICE TRAVEL DIFFERENCE
Shutoff solenoid	<del>†</del>
Volt : 12	+ Rated speed rpm : 1250
<b></b>	+ Del. quantity
FULL-LOAD SPEED REGULATION	+ cm3/1000 strokes : -1.0
	+ Tolerance
Rated speed rpm : 2575	+ cm3/1000 str. +-: 0.1
Pressure hPa : 1000	+ Shutoff solenoid
Del. quantity	+ Volt : 12
cm3/1000 strokes : 14.0	
Tolerance	
Tolerance cm3/1000 str. +-: 2.0	INJECTION-PUMP TEST SPECIFICATIONS
Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS
Tolerance cm3/1000 str. +-: 2.0	
Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid Volt : 12	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC
Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS
Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid Volt : 12 STARTING FUEL DELIVERY	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure
Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5
Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +: 0.4 Check tolerance mm +: 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +: 0.4 Check tolerance mm +: 0.7 Shutoff solenoid Volt : 12
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance cm3/1000 str. + : 3.0	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm + : 0.4
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance cm3/1000 str. + : 3.0	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm + : 0.4 Check
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solenoid	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solenoid	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solenoid	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 1.5 Tolerance mm + : 0.7 Shutoff solenoid Volt : 12
Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solenoid Volt : 12	INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid

Rated speed rpm : Aneroid pressure	2000		†	Rated speed rpm Aneroid pressure	:	2375
hPa :	1000		Ŧ	hPa	:	1000
Supply pomp pressure bar :	7.5	•	‡	Del. quantity cm3/1000 strokes	:	39.0
Tolerance bar + : Shutoff solenoid	0.3		Ì	Tolerance cm3/1000 str. +-	•	5.0
Volt :	12		+	Check tolerance		
Rated speed rpm :	750	-	‡	cm3/1000s. +- Shutoff solenoid	:	6.0
Aneroid pressure hPa :	1000		‡	Volt	:	12
Supply pomp pressure bar :	4.3	•	Ì	Rated speed rpm Aneroid pressure	:	2750
Tolerance bar +-:	0.3	•	-	hPa	:	1000
Shutoff solenoid :	12	•	‡	Del. quantity cm3/1000 strokes	:	3.0
OVERFLOW QUANTITY			‡	Tolerance cm3/1000 str. →	:	3.0
Rated speed rpm :	2150	•	†	Check tolerance		3.0
Aneroid pressure			Ŧ	Shutoff solenoid	•	
hPa : Overflow quantity	1000	•	‡	Volt	:	12
ccm/10s : Tolerance	97.2	•	1	Rated speed rpm Aneroid pressure	:	750
ccm/10s +:	41.6	-	+	hPa	:	350
Check tolerance			-	LDA/		
ccm/10s +-: Shutoff solenoid	41.6		‡	HBA stroke mm Del. quantity	:	5,9
Volt :	12	•	ł	T (4000	:	46.0
Rated speed rpm : Aneroid pressure	500		-	cm3/1000 str. +-	:	0.5
hPa :	1000	-	-	Check tolerance cm3/1000s. +-	:	3.0
Overflow quastity ccm/10s	63.8		‡	Shutoff solenoid Volt	:	12
Tolerance +:	22.2		ł	Rated speed rpm	:	2150
		-	+	Aneroid pressure	•	
Check tolerance ccm/10s +:	22.2	-	Ŧ	hPa Del. quantity	:	1000
Shutoff solenoid Volt :	12	-	<u> </u>	cm3/1000 strokes Tolerance	:	50.5
DELIVERY AND BREAKAW	IAY CHARACT	FRISTIC -	ł	cm3/1000 str. +- Check tolerance	:	1.0
		ENIOTIO		cm3/1000s. +-	:	2.2
Rated speed rpm : Aneroid pressure	2575	-	-	Shutoff solenoid Volt	:	12
hPa : Del. quantity	1000	-	<u> </u>	Rated speed rpm	:	2000
cm3/1000 strokes : Tolerance	14.0	•	Ì	Aneroid pressure hPa		1000
cm3/1000 str. + :	2.0	•	-	Del. quantity	•	
Check tolerance cm3/1000s. +:	4.0	-	-	cm3/1000 strokes Tolerance	:	51.5
Shutoff solenoid Volt :	12	-	‡	cm3/1000 str. +- Check tolerance	:	1.0
•		7	+	cm3/1000s. +-	:	2.2

Shutoff solenoid Volt : 12	+ Tolerance + cm3/1000 str. +-: 1.5 + Check tolerance
Rated speed rpm : 500 Aneroid pressure	cm3/1000s. +-: 1.5
hPa : 1000 Del. quantity	1
cm3/1000 strokes : 48.3 Tolerance	
cm3/1000 str. +-: 1.5 Check tolerance	CHECKING LOAD-DEPENDENT
cm3/1000s. +: 3.0 Shutoff solenoid	START OF DELIVERY
Volt : 12	DELIVERY DIFFERENCE
Rated speed rpm : 1250 Aneroid pressure	Rated speed rpm : 1250 Del. quantity
hPa : 1000 Del. quantity	+ cm3/1000 strokes : -13.0 + Tolerance
cm3/1000 strokes : 54.0 Tolerance	+ cm3/1000 str. +: 2.0 + Check tolerance
cm3/1000 str. +-: 0.5 Check tolerance	+ cm3/1000s. +: 5.0 + Shutoff solenoid
cm3/1000s. ←: 2.2 Shutoff solenoid	- Volt : 12
Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE
MECHANICAL SHUTOFF	Rated speed rpm : 1250  Del. quantity
Rated speed rpm : 2000	+ cm3/1000 strokes : -1.0 + Tolerance
Aneroid pressure hPa : 1000	+ cm3/1000 str. + : 0.1 + Check tolerance
Del. quantity cm3/1000 strokes : 1.5	+ cm3/1000s. +-: 0.1 + Snutcff solenoid
Tolerance cm3/1000 str. +-: 1.5	+ Volt : 12
Check tolerance cm3/1000s. +: 1.5	+ DELIVERY DIFFERENCE
Shutoff solenoid Volt : 12	+ Rated speed rpm : 1250 + Del. quantity
ELECTR. SHUTOFF	- cm3/1000 strokes : 5.0 - Tolerance - cm3/1000 str. +- : 3.0
CONTROL LEVER, IDLE STOP	+ cm3/1000 str. +-: 3.0 + Check tolerance + cm3/1000s. +-: 3.0
Rated speed rpm : 440 Del. quantity	Shutoff solenoid Volt : 12
cm3/1000 strokes : 1.5 Tolerance	PRESSURE DIFFERENCE
cm3/1000 str. +: 1.5 Check tolerance	Rated speed rpm : 1250
cm3/1000s. + : 1.5	Supply pomp  pressure bar : -1.1
FULL-LOAD STOP CONTROL LEVER	Tolerance bar +: 0.2 Shutoff solenoid
Rated speed rpm : 440 Del. quantity	Volt : 12
cm3/1000 strokes : 1.5	TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250 Tolerance mm +: 0.2 Check tolerance mm +--: 0.7 Shutoff solenoid

Volt 12

# EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1250

Aneroid pressure

hPa 1000

Del. quantity

cm3/1000 strokes : 17.8

Tolerance

cm3/1000 str. +-:1.0

Check tolerance

cm3/1000s.4.0

Shutoff solenoid

12 Volt

# START TRANSITION

380 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 35.0

Tolerance

cm3/1000 str. + :10.0

Shutoff solenoid

12 Volt

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

5,9 HBA stroke mm

: 3,3 Dimension K mm

Tolerance mm + : +-0.1Dimension KF mm : 6,0

Tolerance mm +-:+-0.2

Dimension MS mm : 1,3

Tolerance mm +-: +-0,2

# **MICROSWITCH**

SET

: 0,8...3,0

: ARF 12,0

# CONTROL LEVER POSITION

SET

Control Lever

position YA mm : 25,8..29,8

End of test-specification sheet

L06

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition | : 18.10.95 Test oil : ISO 4113

Part no. : 0 460 494 423 Pump designation : VE4/9F2250R513-4

Customer-spec. information Customer : PSA

: XUD 9 TF/L EGR Motor

Power KW 66.0

# TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C + :

Overflow

restriction mm: 0.55

Inlet press. bar : 0.35 Tolerance bar + :

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

Tolerance bar +-:

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

## REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Aneroid pressure

hPa 1000

Setting mm 3.6 Tolerance mm 0.2 Shutoff solenoid

12 Volt

# SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Aneroid pressure

hPa 1000 Supply pomp

pressure bar 5.6 Tolerance bar + : 0.3

Shutoff solenoid

Volt 12

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm = 1250 Aneroid pressure

hPa 1000

Del. quantity

cm3/1000 strokes : 54.0

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes : 2.0

Check tolerance

cm3/1000s.3.0

Shutoff solenoid

Volt 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 37.0

Tolerance cm3/1000 str. +-: 0.5

Shutoff solenoid

Volt 12

Check tolerance

cm3/1000s. 3.0

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490

Del. quantity

cm3/1000 strokes : 8.5

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid + Volt : 12	DEL TUEDY DIFFERENCE
vocc ; 12 <u>1</u>	DELIVERY DIFFERENCE
IDLE DELIVERY	Rated speed rpm : 1250
I	Rated speed rpm : 1250 Del. quantity
Rated speed rpm : 440	cm3/1000 strokes : -10.0
Del. quantity	Tolerance
cm3/1000 strokes : 16.0	cm3/1000 str. +-: 1.0
Tolerance	Shutoff solenoid
cm3/1000 str. +: 1.0	Volt : 12
Spread	1 100
cm3/1000 strokes : 2.0	PRESSURE DIFFERENCE
Shutoff solenoid +	
Volt : 12 +	Rated speed rpm : 1250
+	Del. quantity
HIGH IDLE SETTING +	cm3/1000 strokes : -0.2
+	Tolerance
Rated speed rpm : 490 +	cm3/1000 str. + : 0.1
Del. quantity +	Shutoff solenoid
cm3/1000 strokes : 16.0	Vol.t : 12
Tolerance + 1.0 + 1.0	TIMING DEVICE TRAVEL ATECPRENCE
Shutoff solenoid	TIMING-DEVICE TRAVEL DIFFERENCE
Volt : 12	Rated speed rpm : 1250
· · · · I	Del. quantity
FULL-LOAD SPEED REGULATION	cm3/1000 strokes : -1.0
1	Tolerance
Rated speed rpm : 2575	cm3/1000 str. +-: 0.1
Pressure hPa : 1000	Shutoff solenoid
Del. quantity	Volt : 12
cm3/1000 strokes : 14.0	
Tolerance	
cm3/1000 str. +: 2.0 +	INJECTION-PUMP TEST SPECIFICATIONS
cm3/1000 str. +: 2.0 + Shutoff solenoid +	
cm3/1000 str. +: 2.0 +	INJECTION-PUMP TEST SPECIFICATIONS TIMING DEVICE CHARACTERISTIC
cm3/1000 str. + : 2.0 + Shutoff solenoid Volt : 12	TIMING DEVICE CHARACTERISTIC
cm3/1000 str. +: 2.0 + Shutoff solenoid +	TIMING DEVICE CHARACTERISTIC Rated speed rpm : 2000
cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure
cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150	TIMING DEVICE CHARACTERISTIC Rated speed rpm : 2000
cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000  Aneroid pressure hPa : 1000
cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5
cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4
cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +- : 0.4 Check
cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +- : 0.4 Check
cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7
cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12
cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid Volt : 12	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750
Cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +- : 0.4 Check tolerance mm +- : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure
Cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750
Cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000
cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +- : 0.4 Check tolerance mm +- : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5
Cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +- : 0.4 Check tolerance mm +- : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm +- : 0.4
Cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance cm3/1000 str. +: 3.0	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +- : 0.4 Check tolerance mm +- : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm +- : 0.4 Check
Cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance cm3/1000 str. +: 3.0 Shutoff solenoid	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +- : 0.4 Check tolerance mm +- : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm +- : 0.4 Check tolerance mm +- : 0.4
Cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance cm3/1000 str. +: 3.0	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid
Cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance cm3/1000 str. +: 3.0 Shutoff solenoid	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +- : 0.4 Check tolerance mm +- : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm +- : 0.4 Check tolerance mm +- : 0.4
Cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance cm3/1000 str. +: 3.0 Shutoff solenoid	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid
Cm3/1000 str. +: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance cm3/1000 str. +: 3.0 Shutoff solenoid Volt : 12	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +- : 0.4 Check tolerance mm +- : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm +- : 0.4 Check tolerance mm +- : 0.7 Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Shutoff solenoid + Volt : 1	2
	+	۷
Rated speed rpm : 2000 Aneroid pressure	+ Rated speed rpm : 2375 + Aneroid pressure	
hPa : 1000 Supply pomp	+ hPa : 100	0
pressure bar : 7.5	+ Del. quantity + cm3/1000 strokes : 39.	0
Tolerance bar + : 0.3 Shutoff solenoid	+ Tolerance + cm3/1000 str. +-: 5.	0
Volt : 12	Check tolerance cm3/1000s. +-: 6.	n
Rated speed rpm : 750 Aneroid pressure	+ Shutoff solenoid	2
hPa : 1000	+	۷
Supply pomp pressure bar : 4.3	Rated speed rpm : 2750 Aneroid pressure	
Tolerance bar + : 0.3	+ hPa : 100	0
Shutoff solenoid Volt : 12	Del. quantity cm3/1000 strokes : 3. Tolerance	0
OVERFLOW QUANTITY	+ cm3/1000 str. $+$ : 3.	0
Rated speed rpm : 2150	+ Check tolerance - cm3/1000S. +-: 3.	0
Aneroid pressure hPa : 1000	+ Shutoff solenoid + Volt : 1	2
Overflow quantity ccm/10s : 97.2	Rated speed rpm : 750	
Tolerance ccm/10s +-: 41.6	Aneroid pressure hPa : 35	'n
	+	0
Check tolerance ccm/10s +-: 41.6	+ LDA/ + HBA stroke mm : 5/	9
Shutoff solenoid	+ Del. quantity	
Volt : 12	cm3/1000 strokes : 46. Tolerance	
Rated speed rpm : 500 Aneroid pressure	+ cm3/1000 str. ⊹— : 0. + Check tolerance	5
hPa : 1000 Overflow quantity	+ cm3/1000s. $+-$ : 3.	0
ccm/1 <b>0</b> s : 63.8	+ Shutoff solenoid + Volt : 1	2
Tolerance ccm/10s +-: 22.2	Rated speed rpm : 2150	
Check tolerance	Aneroid pressure + hPa : 100	n
ccm/10s ←: 22.2	+ Del. quantity	
Shutoff solenoid Volt : 12	+ cm3/1000 strokes : 50 + Tolerance	
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ cm3/1000 str. +-: 1.0 + Check tolerance	0
Rated speed rpm : 2575	+ cm3/1000s. +-: 2.3 + Shutoff solenoid	2
Aneroid pressure	Volt : 17	2
hPa : 1000 Del. quantity	Rated speed rpm : 2000	
cm3/1000 strokes : 14.0 Tolerance	+ Aneroid pressure + hPa : 100	n
cm3/1000 str. +-: 2.0	+ Del. quantity	
Check tolerance cm3/1000s. +-: 4.0	+ cm3/1000 strokes : 51.	ر

Tolerance	+	Rated speed rpm :	: 440
cm3/1000 str. +-: 1	.0 1	Del. quantity	, ,,=
Check tolerance		cm3/1000 strokes	1.5
	.2	Tolerance	
Shutoff solenoid	• 1/4		. 45
	12	cm3/1000 str. +-:	: 1.5
Volt :	12	Check tolerance	
	+	cm3/1000s. +- :	: 1.5
Rated speed rpm : 500	+		
Aneroid pressure	+		
nPa : 10	00 +		
Del. quantity	1		
	.3		
Tolerance	1		
	.5	CHECKING LOAD-DEPEN	INENT
Check tolerance	· ·	START OF DELIVERY	VOCIVI
	.o I	START OF DELIVERY	
Shutoff solenoid	••	DEL TUEDY DEFENDENCE	
	42 T	DELIVERY DIFFERENCE	:
Volt :	12		4000
Dakad anned our	t	Rated speed rpm :	1250
Rated speed rpm : 1250	†	Del. quantity	
Aneroid pressure	+	cm3/1000 strokes :	-13.0
	00 +	Tolerance	
Del. quantity	+	cm3/1000 str. + :	2.0
cm3/1000 strokes : 54	.0 +	Check tolerance	
Tolerance	+	cm3/1000s. +-:	5.0
cm3/1000 str. + : 0	.5	Shutoff solenoid	
Check tolerance	+	Volt :	: 12
cm3/1000s. +-: 2	.2		
Shutoff solenoid	1	TIMING-DEVICE TRAVE	I DIFFERENCE
	12		
		Rated speed rpm :	1250
		Del. quantity	1250
MECHANICAL SHUTOFF	T	cm3/1000 strokes :	4.0
MECHANICAL SHOTOFF	T		-1.0
Dated around arm a 2000	T	Tolerance	0.4
Rated speed rpm : 2000	†	cm3/1000 str. +:	0.1
Aneroid pressure	<u> </u>	Check tolerance	
hPa : 10	u †	cm3/1000s. +-:	0.1
Del. quantity	_ +	Shutoff solenoid	
	.5 +	Volt :	12
Toterance	+		
	.5	DELIVERY DIFFERENCE	
Check tolerance	+		
cm3/1000s. + : 1	.5 🕂	Rated speed rpm :	1250
Shutoff solenoid	+	Del. quantity	
	12	cm3/1000 strokes :	5.0
	1	Tolerance	
		cm3/1000 str. + :	3.0
ELECTR. SHUTOFF	1	Check tolerance	3.3
CONTROL LEVER, IDLE STOP	1	cm3/1000s. +-:	3.0
CONTINUE RECEIVED TO CO. C. C.	1	Shutoff solenoid	J.0
Rated speed rpm : 440	1	Volt :	12
Del. quantity	I		16
	.5	PRESSURE DIFFERENCE	•
Tolerance	· · T	LIVESSONE DILLEKENCE	•
	- T	Option amount num	1250
	.5	Rated speed rpm :	1250
Check tolerance	_	Supply pomp	4.4
$cm3/1000s. \leftarrow : 1$	.5	pressure bar : Tolerance bar +:	-1.1
<b>5</b>		Tolerance bar +-:	U.2
FULL-LOAD STOP CONTROL LEVI	ER +	Shutoff solenoid	
	+	Volt :	12

#### TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250 Tolerance mm + : 0.2

Check

tolerance mm + : 0.7

Shutoff solenoid

Volt : 12

## EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1250

Aneroid pressure

hPa : 1000

Del. quantity

cm3/1000 strokes : 17.8

Tolerance

cm3/1000 str. + : 1.0

Check tolerance

cm3/1000s. + : 4.0

Shutoff solenoid

Volt : 12

#### START TRANSITION

Rated speed rpm : 380

Del. quantity

cm3/1000 strokes : 35.0

Tolerance

cm3/1000 str. + : 10.0

Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 5,9

Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 6,0
Tolerance mm + : +0,2
Dimension MS mm : 1,3

Tolerance mm +:+0.2

MICROSWITCH SET

: ARF 12,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 25,8..29,8

End of test-specification sheet

L11

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.10.95 Test oil : ISO 4113

Part no. : 0 460 494 430 Pump designation : VE4/9F2250R513-5

Customer—spec. information Customer : PSA

Motor : XUD 9 TF/X3
Power KW : 66.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

#### REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure

hPa : 1000

Setting mm : 3.6
Tolerance mm +-: 0.2
Shutoff solenoid

Volt : 12

### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Supply pomp

pressure bar : 5.6 Tolerance bar + : 0.3

Shutoff soleroid

Volt : 12

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 54.0
Tolerance
cm3/1000 str. + : 0.5

cm3/1000 str. ++: 0.5 Spread

cm3/1000 strokes : Check tolerance

Check tolerance cm3/1000s. : 3.0 Shutoff soleraid

Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

2.0

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 37.0
Tolerance
cm3/1000 str. +-: 0.5
Shutoff solenoid
Volt : 12

Volt : 12 Check tolerance cm3/1000s. : 3.0

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490

Del. quantity

cm3/1000 strokes : 8.5

Tolerance

cm3/1000 str. + : 0.5

Shutoff solenoid Volt	: 12	† DELIVERY DIFFERENCE
IDLE DELIVERY		kared speed rpm : 1250
Rated speed rpm	: 440	+ Del. quantity + cm3/1000 strokes : -10.0
Del. quantity cm3/1000 strokes Tolerance	: 16.0	+ Tolerance + cm3/1000 str. +-: 1.0
cm3/1000 str. +-	: 1.0	Shutoff solenoid Volt : 12
cm3/1000 strokes Shutoff solenoid	: 2.0	PRESSURE DIFFERENCE
Volt	: 12	Rated speed rpm : 1250 Del. quantity
HIGH IDLE SETTING		cm3/1000 strokes : -0.2
Rated speed rpm Del. quantity		- cm3/1000 str. +-: 0.1 - Shutoff solenoid
cm3/1000 strokes Tolerance		Volt : 12
cm3/1000 str. +- Shutoff solenoid		TIMING-DEVICE TRAVEL DIFFERENCE
Volt	: 12	+ Rated speed rpm : 1250 + Del. quantity
FULL-LOAD SPEED R		+ cm3/1000 strokes : -1.0 + Tolerance
Rated speed rpm Pressure hPa	: 2575 : 1000	+ cm3/1000 str. + : 0.1 + Shutoff solenoid
Del. quantity cm3/1000 strokes Tolerance	: 14.0	+ Volt : 12
cm3/1000 str. +-	: 2.0	INJECTION-PUMP TEST SPECIFICATIONS
Shutott solenoia		
Shutoff solenoid Volt	: 12	TIMING DEVICE CHARACTERISTIC
		TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000  Aneroid pressure
Volt STARTING FUEL DEL Rated speed rpm Del. quantity	IVERY: 150	+ Rated speed rpm : 2000
Volt STARTING FUEL DEL Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	IVERY : 150 : 52.0	Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4
Volt  STARTING FUEL DEL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid	: 150 : 52.0 : 15.0	Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7
Volt  STARTING FUEL DEL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt	IVERY : 150 : 52.0 : 15.0 : 12	Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4 Check
Volt  STARTING FUEL DEL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid	IVERY : 150 : 52.0 : 15.0 : 12 RTING DELIVERY	Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750
Volt  STARTING FUEL DEL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  SET GRADUATED STAL CONTROL LEVER, ID.  Rated speed rpm	IVERY : 150 : 52.0 : 15.0 : 12 RTING DELIVERY LE STOP	Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12
Volt  STARTING FUEL DEL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  SET GRADUATED STA CONTROL LEVER, ID	: 150 : 52.0 : 15.0 : 12 RTING DELIVERY LE STOP : 200	Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5
STARTING FUEL DEL Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  SET GRADUATED STAL CONTROL LEVER, ID: Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid	: 150 : 52.0 : 15.0 : 12 RTING DELIVERY LE STOP : 200 : 53.0 : 3.0	Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5
Volt  STARTING FUEL DEL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  SET GRADUATED STAL CONTROL LEVER, ID.  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 150 : 52.0 : 15.0 : 12 RTING DELIVERY LE STOP : 200 : 53.0	Rated speed rpm : 2000  Aneroid pressure hPa : 1000  SV travel mm : 6.5 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.5 Tolerance mm + : 0.4 Check

Rated speed rpm Aneroid pressure	: 2000	-		ated speed rpm neroid pressure	:	2375
hPa	: 1000	-	} h	Pa	:	1000
Supply pomp pressure bar	: 7.5	- -		el. quantity m3/1000 strokes	:	39.0
Tolerance bar +- Shutoff solenoid	: 0.3	-	- т	olerance		
Volt	: 12	-		m3/1000 str. +-	:	5.0
Rated speed rpm	: 750	-		m3/1030s. +- hutoff solenoid	:	6.0
Aneroid pressure		3		nutorr solenoia olt	:	12
hPa Supply pomp	: 1000	-	}	atad apaad nam	:	2750
pressure bar	: 4.3	7		ated speed rpm neroid pressure	•	2750
Tolerance bar +- Shutoff solenoid	: 0.3	-		Pa el. quantity	:	1000
Volt	: 12			m3/1000 strokes	:	3.0
OVERFLOW QUANTITY		-		olerance m3/1000 str. +-	•	3.0
		-	- c	heck tolerance	•	
Rated speed rpm Aneroid pressure	: 2150	1		m3/1000S. +- hutoff solenoid	:	3.0
hPa	: 1000	-		olt	:	12
Overflow quantity ccm/10s	: 97.2	1	- 8	ated speed rpm	:	750
Tolerance		-	- A	neroid pressure	•	
ccm/10s +-	: 41.6	**	- h	Pa	:	350
Check tolerance	. // /	-	t .	DA/		5.0
ccm/10s +- Shutoff solenoid	: 41.6	-		BA stroke mm el. quantity	:	5,9
Volt	: 12	-	- c	m3/1000 strokes	:	46.0
Rated speed rpm	: 500	4		olerance m3/1000 str. +-	:	0.5
Aneroid pressure	: 1006			heck tolerance		7.0
Overflow quantity		7		m3/1000s. +-	:	3.0
ccm/10s Tolerance	: 63.8	-	- V	olt	:	12
ccm/10s +-	: 22.2	1	- R	ated speed rpm	:	2150
Check tolerance		4		neroid pressure Pa	•	1000
ccm/10s +	: 22.2	-	- D	el. quantity	•	
Shutoff solenoid Volt	: 12	4		m3/1000 strokes olerance	:	50.1
			- с	m3/1000 str. +-	:	1.0
DELIVERY AND BREA	KAWAY CHARAC	TERISTIC -		heck tolerance m3/1000s. +-	:	2.2
Rated speed rpm	: 2575	-	- s	hutoff solenoid		
Aneroid pressure hPa	: 1000	1	- V	olt	:	12
Del. quantity	. 4/ 0	-		ated speed rpm	:	2000
cm3/1000 strokes Tolerance	: 14.0	1		neroid pressure Pa	:	1000
cm3/1000 str. +- Check tolerance	: 2.0			el. quantity m3/1000 strokes		52.0
cm3/1000s. +-	: 4.0	1	- Te	olerance		
Shutoff solenoid Volt	: 12	-		m3/1000 str. +- heck tolerance	:	1.0
4011	. 12	7		m3/1000s. +-	:	2.2

Shutoff solenoid Volt : 12	Tolerance cm3/1000 str. +-: 1.5
Rated speed rpm : 500 Aneroid pressure	thesk tolerance cm3/1000s. +: 1.5
hPa : 1000 Del. quantity	Ī
cm3/1000 strokes : 48.3 Tolerance	- I
cm3/1000 str. + : 1.5 Check tolerance	CHECKING LOAD-DEPENDENT
cm3/1000s. +: 3.0 Shutoff solenoid	START OF DELIVERY
Volt : 12	DELIVERY DIFFERENCE
Rated speed rpm : 1250 Ameroid pressure	Rated speed rpm : 1250 Del. quantity
hPa : 1000 Del. quantity	cm3/1000 strokes : -13.0 Tolerance
<pre>cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +-: 0.5</pre>	cin3/1000 str. +: 2.0 Check tolerance cm3/1000s. +: 5.0
Check tolerance cm3/1000s. +: 2.2	+ cm3/1000s. + : 5.0 + Shutoff solenoid + Volt : 12
Shutoff solenoid Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE
	+ Rated speed rpm : 1250
MECHANICAL SHUTOFF	Del. quantity + cm3/1000 strokes : -1.0
Rated speed rpm : 2000 Ameroid pressure	Tolerance cm3/1000 str. + : 0.1
hPa : 1000 Del. quantity	+ Check tolerance - cm3/1000s. + : 0.1
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5</pre>	Shutoff solenoid 12
Check tolerance cm3/1000s. +: 1.5	DELIVERY DIFFERENCE
Shutoff solenoid Volt : 12	Rated speed rpm : 1250  Del. quantity
	cm3/1000 strokes : 5.0
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	cm3/1000 str. +-: 3.0 Check tolerance
Rated speed rpm : 440	+ cm3/1000s. +: 3.0 + Shutoff solenoid
Del. quantity cm3/1000 strokes : 1.5	+ Volt : 12
Tolerance cm3/1000 str. +: 1.5	PRESSURE DIFFERENCE
Check tolerance cm3/1000s. ←: 1.5	+ Rated speed rpm : 1250 + Supply pomp + pressure bar : -1.1
FULL-LOAD STOP CONTROL LEVER	+ Tolerance bar + : 0.2 + Shutoff solenoid
Rated speed rpm : 440 Del. quantity	Volt : 12
cm3/1000 strokes : 1.5	TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250 0.2 Tolerance mm +: Check tolerance mm +: 0.7

Shutoff solenoid

12 Volt

## EXHAUST-GAS RECIRCULATION

Rated speed rpm 1250

Aneroid pressure hPa

1000 Del. quantity 17.8

cm3/1000 strokes :

Tolerance

cm3/1000 str. +-:

1.0 Check tolerance

4.0

cm3/1000s.

Shutoff solenoid Volt 12

#### START TRANSITION

Rated speed rpm : 380

Del. quantity

cm3/1000 strokes : 35.0

Tolerance

cm3/1000 str. +-: 10.0

Shutoff solenoid

Volt 12

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

5,9 HBA stroke mm : 3,3 Dimension K mm Tolerance  $m_1 + : +0,1$ : 6,0 Dimension KF mm

Tolerance mm +: +-0,2

: 1,3 Dimension MS mm Tolerance mm + : + 0.2

## MICROSWITCH

SET

: ARF 12,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 28,8..32,8 Control lever

position Y3 mm : 59,2..80,8

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.06.96 Test oil : ISO 4113

: 0 460 416 056 Part no. Pump designation: VE6/11F1500R55-9

Customer-spec. information Customer : MAN : D (1226 MF Motor Power KW 100.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C +:

Cverflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

: 1 688 901 000 assembly

Opening pressure

bar Tolerance bar +-:

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm Tolerance mm +-: +-0,02

Check

tolerance mm +-: +-0,04

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1000

Setting imm 6.2 Tolerance mm +-: 0.2 Shutoff solenoid Volt 24

#### SUPPLY PUMP PRESSURE

Rated speed rpm 1000 Supply pomp pressure bar 6.0 Tolerance bar + : 0.3 Shutoff solenoid Volt 24

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 64.0 Tolerance cm3/1000 str. +-:0.5 Spread cm3/1000 strokes : Shutoff solenoid Volt 24

#### IDLE SETTING

Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. +-:3.0 Shutoff solenoid Volt 24 Spread cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. 3.5

#### FULL-LOAD SPEED REGULATION

Rated speed rpm : 1550

Del. quantity	<b>+</b>
cm3/1000 strokes : 55.0	Rated speed rpm : 1500
Tolerance	- Gverflow quantity
cm3/1000 str. +-: 3.0	ccm/10s : 97.2
Shutoff solenoid	
	+ Tolerance
Volt : 24	+ ccm/10s + : 41.6
	†
STARTING FUEL DELIVERY	+ Check tolerance
	+ ccm/10s +-: 41.6
Rated speed rpm : 100	+ Shutoff solenoid
Del. quantity	+ Volt : 24
cm3/1000 strokes : 65.0	+
Tolerance	+ Rated speed rpm : 600
cm3/1000 str. + : 20.0	- Overflow quantity
Shutoff solenoid	+ ccm/10s : 62.5
Volt : 24	+ Tolerance
	+ ccm/10s +-: 22.2
	- Check tolerance
	+ ccm/10s + : 22.2
	Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	
TIMECITAL LOUR LEST SECTETATIONS	† Volt : 24
TIMING DEVICE CHARACTERICTIC	DELTUEDY AND DESIGNATION CHARACTERISTIC
TIMING DEVICE CHARACTERISTIC	+ DELIVERY AND BREAKAWAY CHARACTERISTIC
had all mand a 4400	†
Rated speed rpm : 1400	+ Rated speed rpm : 1550
	† Del. quantity
SV travel mm : 9.0	+ cm3/1000 strokes : 55.0
Tolerance mm +-: 0.4	+ Tolerance
Check	+ cm3/1000 str. + : 3.0
tolerance mm + : 0.7	+ Check tolerance
Shutoff solenoid	+ cm3/1000s. $+$ : 4.5
Volt : 24	+ Shutoff solenoid
	+ Volt : 24
Rated speed rpm : 600	
	Rated speed rpm : 1630
SV travel mm : 3.7	+ Del. quantity
Tolerance mm +-: 0.4	+ cm3/1000 strokes : 7.5
Check	+ Check tolerance
tolerance mm + : 0.7	1
Shutoff solenoid	
	+ Shutoff solenoid
Volt : 24	+ Volt : 24
CUDDLY DIME DEFOCUE SHAPASTESTST	Topodomical and 4700
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Rated speed rpm : 1700
<b>A</b> 1	+ Del. quantity
Rated speed rpm : 1400	+ cm3/1000 strokes : 1.5
Supply pomp	† Tolerance
pressure bar : 7.5	+ cm3/1000 str. +-: 1.5
Tolerance bar +-: 0.3	† Check tolerance
Shutoff solenoid	+ cm3/1000s. +-: 1.5
Volt : 24	+ Shutoff solenoid
	+ Volt : 24
Rated speed rpm : 600	+
Supply pomp	Rated speed rpm : 1580
pressure bar : 4.5	- Del. quantity
Tolerance bar +-: 0.3	- cm3/1000 strokes : 30.0
Shutoff solenoid	+ Tolerance
Volt : 24	cm3/1000 str. +-: 15.0
, 64	Check tolerance
OVERFLOW QUANTITY	+ cm3/1000s. +-: 15.0
OAFULFOM MONIALTIL	T (1113/1000). This 13.0

Shutoff solenoid		
Volt :	24	FULL-LOAD STOP CONTROL LEVER
Rated spéed rpm : Del. quantity	1500	Rated speed rpm : 350 Del. quantity
cm3/1000 strokes : Tolerance	72.0	cm3/1000 strokes : 1.5 Tolerance
cm3/1000 str. +-: Check tolerance	1.5 $\frac{1}{1}$	cm3/1000 str. +-: 1.5 Spread
<pre>cm3/1000s. +-: Shutoff solenoid</pre>	4.0	cm3/1000 strokes : 5.0 Check tolerance
Volt :	24	cm3/1000s. +-: 1.5 Spread
Rated speed rpm : Del. quantity	600	cm3/1000 strokes : 5.0
cm3/1000 strokes : Tolerance	47.5	IDLE DELIVERY
cm3/1000 str. + : Check tolerance	2.0	Rated speed rpm : 450 Del. quantity
cm3/1000S. $\leftarrow$ : Shutoff solenoid	3.5	cm3/1000 strokes : 1.5 Tolerance
Volt :	24	cm3/1000 str. +-: 1.5 Check tolerance
Rated speed rpm : Del. quantity	1000	cm3/1000S. +-: 1.5 Shutoff solenoid
cm3/1000 strokes : Tolerance	64.0	Volt : 24
cm3/1000 str. ← : Check tolerance	0.5	
cm3/1000s. +-: Shutoff solenoid	2.5	
Volt :	24	START TRANSITION
MECHANICAL SHUTOFF	Ī	Rated speed rpm : 500 Del. quantity
Rated speed rpm : Del. quantity	1500	cm3/1000 strokes : 40.0 Tolerance
cm3/1000 strokes : Tolerance	1.5	cm3/1000 str. +-: 15.0 Shutoff solenoid
cm3/1000 str. + : Check tolerance	1.5	Volt : 24
cm3/1000s. +-: Shutoff solenoid	1.5	Rated speed rpm : 370
Volt :	24	Del. quantity cm3/1000 strokes : 75.0
ELECTR. SHUTOFF		Tolerance cm3/1000 str. +-: 20.0
CONTROL LEVER, IDLE S	TOP	Shutoff solenoid Volt : 24
Rated speed rpm : Del. quantity	350	
cm3/1000 strokes : Tolerance	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 str. +-: Check tolerance	1.5	Dimension KF mm : 5,8 Tolerance mm +- : +-0,2
cm3/1000s. +-: Spread	1.5	Dimension MS mm : 1,3 Tolerance mm +-: +-0,2
cm3/1000 strokes :	5.0	
	•	

CONTROL LEVER POSITION SET

Control Lever

position YA mm : 37,4..40,4

Control lever

position YB mm : 44,0..49,4

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 26.06.96 Edition : ISO 4113 Test oil

: 0 460 426 225 Part no. Pump designation : VE6/12F1200R551

Customer-spec. information Customer : SNF

: WD 612.42 Motor Power KW : 105.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : Tolerance °C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-:

Test nozzle holde

: 1 688 901 110 assembly

Opening pressure

250 Tolerance bar + :

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm : 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0.2 Tolerance mm  $\div$ :  $\div$ -0.02

Check

tolerance mm + : +0.04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 850

Setting mm 2.2 Tolerance mm +-: 0.2

SUPPLY PUMP PRESSURE

Rated speed rpm : 350

Supply pomp

pressure bar 7.6 Tolerance bar +-: 0.3

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 800

Del. quantity

cm3/1000 strokes : 66.0

Tolerance

cm3/1000 str. + : 0.5

cm3/1000 strokes : 4.0

IDLE SETTING

Rated speed rpm : 300

Del. quantity

cm3/1000 strokes : 10.0

Tolerance

cm3/1000 str. +-: 2.0

Spread

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1290

Del. quantity

cm3/1000 strokes : 50.0

Tolerance

cm3/1000 str. +-: 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity		+			
cm3/1000 strokes :	90.0	<b>†</b>	Rated speed rpm Del. quantity	:	1290
cm3/1000 str. +-:	20.0	Ŧ	cm3/1000 strokes	:	50.0
		İ	Tolerance cm3/1000 str. +-		3.0
		+	Check tolerance	•	
	···	İ	cm3/1000s. +-	:	3.5
INJECTION-PUMP TEST SPE	CIFICATIONS	1	Rated speed rpm Del. quantity	:	1350
TIMING DEVICE CHARACTER	ISTIC	Ì	cm3/1000 strokes Check tolerance	:	7.5
Rated speed rpm :	950	1	cm3/1000s. +-	:	7.5
SV travel mm :	3.3	Ţ	Rated speed rpm	:	1400
Tolerance mm <del>+-</del> : Check	0,4	‡	Del. quantity cm3/1000 strokes	:	1.5
tolerance mm +-:	0.7	Ì	Tolerance cm3/1000 str. +-		1.5
Rated speed rpm :	750	+	Check tolerance	•	
SV travel mm :	1.0	<b>İ</b>	cm3/1000s. +-	:	1.5
Tolerance mm +-: Check	0.4	<u>†</u>	Rated speed rpm Del. quantity	:	1300
tolerance mm +:	0.7	Ŧ	cm3/1000 strokes	:	40.0
SUPPLY PUMP PRESSURE CH.	ARACTERISTIC	7	Tolerance cm3/1000 str. +-	:	25.0
	200	‡	Check tolerance cm3/1000s. +	:	25.0
Supply pomp pressure bar :	9.3	1	Rated speed rpm		1200
Tolerance bar +:		+	Del. quantity		
Rated speed rpm :	<b>60</b> 0	Ţ	cm3/1000 strokes Tolerance		66.3
Supply pomp	5.8	+	cm3/1000 str. +-	:	2.5
pressure bar : Tolerance bar +-:	0.3	İ	Check tolerance cm3/1000s. +-		4.0
	0.5	+		•	
CVERFLOW QUANTITY		‡	Rated speed rpm Del. quantity	:	1000
Rated speed rpm : 17 Overflow quantity	200	<u>†</u>	cm3/1000 strokes Tolerance	:	68.5
ccm/10s :	97.2	Ŧ	cm3/1000 str. +	:	2.5
Tolerance ccm/10s + :	41.6	‡	Check tolerance cm3/1000s. +-	•	4.0
	71.0	+		•	
Check tolerance ccm/10s +-:	41.6	İ	Rated speed rpm Del. quantity	:	600
		Ŧ	cm3/1000 strokes	:	65.0
Rated speed rpm : ( Overflow quantity	600	İ	Tolerance cm3/1000 str. +-		4.5
ccm/10s :	63.8	Ŧ	Check tolerance	•	4.5
Tolerance	22.2	+	cm3/1000s. +-	:	6.0
ccm/10s +:		Ŧ		:	800
Check tolerance ccm/10s +-:	22.2	†	Del. quantity cm3/1000 strokes		66.0
C(III/ 103	££ . £	Į	Tolerance	•	00.0
DELIVERY AND BREAKAWAY	CHARACTERISTIC	+	cm3/1000 str. +-	:	0.5

Check tolerance cm3/1000s. +-:

2.5

MECHANICAL SHUTOFF

Rated speed rpm : 1200

Del. quantity

cm3/1000 strokes : 1.5

Tolerance

cm3/1000 str. +: 1.5

Spread

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. 1.5

Spread

cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 1.5

Tolerance

cm3/1000 str. + : 1.5

Check tolerance

cm3/1000s.1.5

START TRANSITION

Rated speed rpm : 430

Del. quantity

cm3/1000 strokes : 65.0

Tolerance

cm3/1000 str. + :15.0

Rated speed rpm : 330

Del. quantity

cm3/1000 strokes : 85.0

Tolerance

cm3/1000 str. +-: 20.0

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension KF mm : 6,0

Tolerance mm +-:+0.2

Dimension MS mm : 1,1

Tolerance mm +:+0.2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 36,2..40,2

Control lever

position YB mm : 51,0..59,0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

See Microcard(S) W4007...

Edition : 25.06.96 Test oil : ISO 4113

Part no. : 0 460 426 231 Pump designation : VE6/12F1200R563

Customer—spec. information Customer : MAN

Motor : D 0826 LOH 06

Power KW : 140.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +- : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 110

Opening pressure

bar : 250 Tolerance bar + : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 Tolerance mm + : +0,02

Check

tolerance mm +-: +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 850

Aneroid pressure

hPa : 1000

Setting mm : 2.2 Tolerance mm + : 0.2

SUPPLY PUMP PRESSURE

Rated speed rpm : 850

Aneroid pressure

hPa : 1000

Supply pomp

pressure bar : 7.5 Tolerance bar + : 0.3

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 800

Aneroid pressure

hPa : 1000

Del. quantity

cm3/1000 strokes : 94.5

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 4.5

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 str. + : 0.5

Check tolerance

cm3/1000s. : 4.5

IDLE SETTING

Rated speed rpm : (250)

Del. quantity

cm3/1000 strokes : 20.0

Tolerance

cm3/1000 str. +-: 3.5

Spread

cm3/1000 strokes : 6.0

Check tolerance cm3/1000s.	•	6.5	+ 1	Aneroid pressur hFa Supply pomp	e :	1000	
				oressure bar		6.3	
				Tolerance bar	+- :	0.3	
			1		•	0.5	
FULL-LOAD SPEED R	EGULA	TION	+ (	OVERFLOW QUANTI	TY		
Rated speed rpm	:	1350	Ť.	Patad speed nam		400	
Pressure hPa		1000	I	Rated speed rpm Overflow quanti:	:	600	
Del. quantity	•	1000	I	com/10s	Ly .	63.8	
cm3/1000 strokes	•	65.0	(	Tolerance	•	03.0	
Folerance	•	05.0		.40	·- :	22.2	
cm3/1000 str. +-	. •	3.0	1,	JUM 100	•	C ( ) C	
	•		1 0	Check tolerance			
STARTING FUEL DEL	IVERY			cm/10s	<b>+-</b> :	22.2	
			1		•		
Rated speed rpm	:	100		Rated speed rpm	:	1200	
Del. quantity				Aneroid pressure			
cm3/1000 strokes	:	90.0		nPa	:	1000	
Tolerance			+ 0	Overflow quanti:	ty		
cm3/1000 str. +	:	30.0	+ 0	ccm/10s	:	97.2	
			+ 1	Tolerance			
			+ 0	ccm/1Ús -	<b>+-</b> :	41.6	
			+				
				Check tolerance			
		<del></del>	+ 0	ccm/10s -	<del>-</del> :	41.6	
INJECTION-PUMP TE	ST SP	ECIFICATIONS	+				
			+ 0	DELIVERY AND BRI	EAKA	MAY CHARACTERIST:	I C
FIMILIAE DEVICE CHA							
TIMING DEVICE CHA	RACIE	RISTIC	+ .			4===	
				Rated speed rpm		1350	
Rated speed rpm	:	950	+ 4	Aneroid pressure	е		
Rated speed rpm Aneroid pressure		950	‡ £	Aneroid pressure nPa		1350 1000	
Rated speed rpm			+ A	Aneroid pressure nPa Del. quantity	e :	1000	
Rated speed rpm Aneroid pressure hPa		950 1000	+ 6	Aneroid pressure nPa Del. quantity cm3/1000 stroke:	e :	1000	
Rated speed rpm Aneroid pressure hPa SV travel mm		950 1000 3.3	+ 6	Aneroid pressure nPa Del. quantity cm3/1000 strokes Tolerance	e :	1000 65.0	
Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm +-		950 1000	+ A + B + C	Aneroid pressurente Pel. quantity cm3/1000 strokes Folerance cm3/1000 str.	e :	1000	
Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm + Check		950 1000 3.3 0.4	+ 6	Aneroid pressurenta Del. quantity cm3/1000 strokes Tolerance cm3/1000 str	e : :	1000 65.0 3.0	
Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm +-		950 1000 3.3	+ 6	Aneroid pressure Pa Del. quantity cm3/1000 strokes Folerance cm3/1000 str. Check tolerance	e :	1000 65.0	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +-		950 1000 3.3 0.4 0.7	+ 6	Aneroid pressurence  Del. quantity  Cm3/1000 strokes  Tolerance  Cm3/1000 str.  Check tolerance  Cm3/1000s.	e : s : + :	1000 65.0 3.0 4.5	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm		950 1000 3.3 0.4	+ + + + + + + + + + + + + + + + + + + +	Aneroid pressurenta Del. quantity cm3/1000 strokes Tolerance cm3/1000 str Check tolerance cm3/1000s	e : s : +- :	1000 65.0 3.0	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure		950 1000 3.3 0.4 0.7	+ + + + + + + + + + + + + + + + + + +	Aneroid pressure nPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. Check tolerance cm3/1000s. Rated speed rpm Aneroid pressure	e :  - :  - :	1000 65.0 3.0 4.5	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm		950 1000 3.3 0.4 0.7	+ + + + + + + + + + + + + + + + + + +	Aneroid pressurenta Del. quantity cm3/1000 strokes Tolerance cm3/1000 str Check tolerance cm3/1000s Rated speed rpm Aneroid pressurenta	e : s : +- :	1000 65.0 3.0 4.5	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure		950 1000 3.3 0.4 0.7	+ + + + + + + + + + + + + + + + + + +	Aneroid pressure nPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. Theck tolerance cm3/1000s. Rated speed rpm Aneroid pressure nPa Del. quantity	e : : : : : : : : : : : : : : : : : : :	1000 65.0 3.0 4.5 1510 1000	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure hPa		950 1000 3.3 0.4 0.7 750 1000	+ + + + + + + + + + + + + + + + + + +	Aneroid pressurenta Del. quantity cm3/1000 strokes Tolerance cm3/1000 str Check tolerance cm3/1000s Rated speed rpm Aneroid pressurenta	e : : : : : : : : : : : : : : : : : : :	1000 65.0 3.0 4.5	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure hPa  SV travel mm		950 1000 3.3 0.4 0.7 750 1000 1.0	+ + + + + + + + + + + + + + + + + + +	Aneroid pressure nPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. Check tolerance cm3/1000s. Rated speed rpm Aneroid pressure nPa Del. quantity cm3/1000 strokes Check tolerance	e : : : : : : : : : : : : : : : : : : :	1000 65.0 3.0 4.5 1510 1000	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +-		950 1000 3.3 0.4 0.7 750 1000 1.0	+ + + + + + + + + + + + + + + + + + +	Aneroid pressure nPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. Check tolerance cm3/1000s. Rated speed rpm Aneroid pressure nPa Del. quantity cm3/1000 strokes Check tolerance	e : : : : : : : : : : : : : : : : : : :	1000 65.0 3.0 4.5 1510 1000 7.5	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Check tolerance mm +-		950 1000 3.3 0.4 0.7 750 1000 1.0 0.4 0.7	+ + + + + + + + + + + + + + + + + + +	Aneroid pressure nPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. Theck tolerance cm3/1000s.  Rated speed rpm Aneroid pressure nPa Del. quantity cm3/1000 strokes Theck tolerance cm3/1000s.		1000 65.0 3.0 4.5 1510 1000 7.5	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check		950 1000 3.3 0.4 0.7 750 1000 1.0 0.4 0.7	+ + + + + + + + + + + + + + + + + + +	Aneroid pressure The Del. quantity Com3/1000 strokes Tolerance Com3/1000 str. Check tolerance Com3/1000s.  Rated speed rpm The Del. quantity Com3/1000 strokes Com3/1000s.  Rated speed rpm The Com3/1000s.  Rated speed rpm The Com3/1000s.		1000 65.0 3.0 4.5 1510 1000 7.5 7.5	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- SUPPLY PUMP PRESS	URE CI	950 1000 3.3 0.4 0.7 750 1000 1.0 0.4 0.7 HARACTERISTIC	++++++++++++++++++++++++++++++++++++++	Aneroid pressure The Del. quantity Cm3/1000 strokes Tolerance Cm3/1000 str. Theck tolerance Cm3/1000s.  Rated speed rpm The Del. quantity Cm3/1000 strokes Check tolerance Cm3/1000s.  Rated speed rpm The Del. quantity Cm3/1000s.  Rated speed rpm The Del. quantity Cm3/1000s.		1000 65.0 3.0 4.5 1510 1000 7.5 7.5	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- SUPPLY PUMP PRESS Rated speed rpm	URE CI	950 1000 3.3 0.4 0.7 750 1000 1.0 0.4 0.7	+++++++++++++++++++++++++++++++++++++++	Aneroid pressure The Del. quantity Cm3/1000 strokes Tolerance Cm3/1000 str. Check tolerance Cm3/1000s.  Rated speed rpm The Del. quantity Cm3/1000s.  Rated speed rpm The Del. quantity Cm3/1000s.  Rated speed rpm The Del. quantity Cm3/1000s.		1000 65.0 3.0 4.5 1510 1000 7.5 7.5 1550 1000	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure	URE CI	950 1000 3.3 0.4 0.7 750 1000 1.0 0.4 0.7 HARACTERISTIC	+++++++++++++++++++++++++++++++++++++++	Aneroid pressure TPA Del. quantity Cm3/1000 strokes Tolerance Cm3/1000 str. Theck tolerance Cm3/1000s.  Rated speed rpm Aneroid pressure TPA Del. quantity Cm3/1000s.  Rated speed rpm Aneroid pressure TPA Del. quantity Cm3/1000 strokes TPA Del. quantity Cm3/1000s.		1000 65.0 3.0 4.5 1510 1000 7.5 7.5	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Check tolerance mm +- Check tolerance mm +- SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure hPa	URE CI	950 1000 3.3 0.4 0.7 750 1000 1.0 0.4 0.7 HARACTERISTIC	++++++++++++++++++++++++++++++++++++++	Aneroid pressure TPA Del. quantity Cm3/1000 strokes Tolerance Cm3/1000 str. Theck tolerance Cm3/1000s.  Rated speed rpm Aneroid pressure TPA Del. quantity Cm3/1000s.  Rated speed rpm Aneroid pressure TPA Del. quantity Cm3/1000s.  Rated speed rpm Aneroid pressure TPA Del. quantity Cm3/1000s.		1000 65.0 3.0 4.5 1510 1000 7.5 7.5 1550 1000 1.5	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Check tolerance mm +- SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure hPa Supply pomp	URE CI	950 1000 3.3 0.4 0.7 750 1000 1.0 0.4 0.7 HARACTERISTIC 1200 1000	++++++++++++++++++++++++++++++++++++++	Aneroid pressure TPA  Del. quantity Cm3/1000 strokes Tolerance Cm3/1000 str. Check tolerance Cm3/1000s.  Rated speed rpm Aneroid pressure TPA Del. quantity Cm3/1000 strokes Cm3/1000s.  Rated speed rpm Aneroid pressure TPA Del. quantity Cm3/1000 strokes TPA Del. quantity Cm3/1000 strokes TOLERANCE TOLERANC		1000 65.0 3.0 4.5 1510 1000 7.5 7.5 1550 1000	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Check tolerance mm +- SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar	URE CI	950 1000 3.3 0.4 0.7 750 1000 1.0 0.4 0.7 HARACTERISTIC 1200 1000 9.0	++++++++++++++++++++++++++++++++++++++	Aneroid pressure The pel. quantity Cm3/1000 strokes Tolerance Cm3/1000 str. Theck tolerance Cm3/1000s.  Rated speed rpm Aneroid pressure The pel. quantity Cm3/1000 strokes Theck tolerance Cm3/1000 strokes The pel. quantity		1000 65.0 3.0 4.5 1510 1000 7.5 7.5 1550 1000 1.5 1.5	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Check tolerance mm +- SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure hPa Supply pomp	URE CI	950 1000 3.3 0.4 0.7 750 1000 1.0 0.4 0.7 HARACTERISTIC 1200 1000	++++++++++++++++++++++++++++++++++++++	Aneroid pressure The Del. quantity Cm3/1000 strokes Tolerance Cm3/1000 str. Theck tolerance Cm3/1000s.  Rated speed rpm Aneroid pressure The Del. quantity Cm3/1000 strokes Theck tolerance Cm3/1000 strokes The Del. quantity Cm3/1000 strokes The Del. quantity Cm3/1000 strokes Tolerance Cm3/1000 strokes Tolerance Cm3/1000 strokes Tolerance Cm3/1000 strokes Tolerance		1000 65.0 3.0 4.5 1510 1000 7.5 7.5 1550 1000 1.5	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar +	URE CI	950 1000 3.3 0.4 0.7 750 1000 1.0 0.4 0.7 HARACTERISTIC 1200 1000 9.0 0.3	++++++++++++++++++++++++++++++++++++++	Aneroid pressure The pel. quantity Com3/1000 strokes Tolerance Com3/1000 str. Check tolerance Com3/1000s.  Rated speed rpm Aneroid pressure The pel. quantity Com3/1000 strokes The pel. quantity Com3/1000 strokes The pel. quantity Com3/1000 strokes Tolerance Com3/1000 strokes Tolerance Com3/1000 strokes Tolerance Com3/1000 strokes Tolerance Com3/1000 strokes Tolerance Com3/1000 strokes Tolerance Com3/1000 strokes Tolerance Com3/1000 strokes		1000 65.0 3.0 4.5 1510 1000 7.5 7.5 1550 1000 1.5 1.5	
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Check tolerance mm +- SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar	URE CI	950 1000 3.3 0.4 0.7 750 1000 1.0 0.4 0.7 HARACTERISTIC 1200 1000 9.0	++++++++++++++++++++++++++++++++++++++	Aneroid pressure The pel. quantity Cm3/1000 strokes Tolerance Cm3/1000 str. Theck tolerance Cm3/1000s.  Rated speed rpm Aneroid pressure The pel. quantity Cm3/1000 strokes Theck tolerance Cm3/1000 strokes The pel. quantity		1000 65.0 3.0 4.5 1510 1000 7.5 7.5 1550 1000 1.5 1.5	

Aneroid pressure hPa : Del. quantity	1000	Check tolerance cm3/1000s. ÷-: 2.5
cm3/1000 strokes : Tolerance	35.0	MECHANICAL SHUTOFF
cm3/1000 str. +: Check tolerance cm3/1000s. +:	20.0	Rated speed rpm : 1200
cm3/1000s. +: Rated speed rpm :	600	Aneroid pressure hPa : 1000 Del. quantity
Aneroid pressure	400	cm3/1000 strokes : 1.5 Tolerance
LDA/	‡	cm3/1000 str. +-: 1.5 Spread
HBA stroke mm : Del. quantity	6.2	cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes : Tolerance	80.0	cm3/1000s. +-: 1.5 Spread
cm3/1000 str. +-: Check tolerance	0.5	cm3/1000 strokes : 5.0
cm3/1000s.	2.5	IDLE DELIVERY
Aneroid pressure hPa :	1000	Rated speed rpm : 400
Del. quantity cm3/1000 strokes :	89.5	Del. quantity cm3/1000 strokes : 1.5
Tolerance cm3/1000 str. +:	2.5	Tolerance cm3/1000 str. +-: 1.5
Check tolerance cm3/1000s. +-:	4.0	Check tolerance cm3/1000s. +-: 1.5
Rated speed rpm : Aneroid pressure	1000	
hPa : Del. quantity	1000	
cm3/1000 strokes : Tolerance	91.5	START TRANSITION
cm3/1000 str. + : Check tolerance	2.5	Rated speed rpm : 480
cm3/1000s. +-:	4.0	Del. quantity cm3/1000 strokes : 60.0
Rated speed rpm : Aneroid pressure hPa :	1000	Tolerance cm3/1000 str. +-: 20.0
Del. quantity cm3/1000 strokes :	100.0	Rated speed rpm : 380
Tolerance cm3/1000 str. +:	4.5	Del. quantity cm3/1000 strokes : 100.0
Check tolerance cm3/1000s. +-:	6.0	Tolerance cm3/1000 str. +-: 20.0
Rated speed rpm :	800	
Aneroid pressure hPa :	1000	ASSEMBLY AND ADJUSTMENT DIMENSIONS
Del. quantity cm3/1000 strokes : Tolerance	94.5	LDA/ HBA stroke mm : 6.2
cm3/1000 str. +-:	0.5	Dimension KF mm : 6,0 Tolerance mm +-: +-0,2

Dimension MS mm : 1,1 Tolerance mm : +0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 37,4..40,4

Control lever

position YB mm : 41,9..48,1

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.05.95 Test oil : ISO 4113

Part no. : C 460 414 108 Pump designation : VE4/11F2000R567

Customer-spec. information
Customer : FORD
Motor : 2.5l DI
Power KW : 56.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +- : 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 114

Opening pressure

bar : 207 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

### REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: : 0,52
Tolerance mm + : +0,05
Outlet : B KDEP1151

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.7
Tolerance mm +: 0.1
Shutoff solenoid
Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250 Supply pomp

pressure bar : 7.2
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

4.0

1000 Rated speed rom Rated speed rpm 500 Del. quantity cm3/1000 strokes : 34.0 Del. quantity cm3/1000 strokes : 25.5 Tolerance cm3/1000 str. + :0.5 Tolerance cm3/1000 str. + : 0.2 Spread cm3/1000 stroke: : 3.0 Shutoff solenoid Volt 12 Shutoff solenoid Volt 12 Check tolerance

#### IDLE SETTING

cm3/1000s.

Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 7.9 Tolerance cm3/1000 str. +-: 1.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. 4.0

<del> </del>	- Rated speed rpm : 2000 - Supply pomp
FIRE LOAD OPERA PECHI ATTOM	pressure bar : 8.9
FULL-LOAD SPEED REGULATION	Tolerance bar +-: 0.3 Shutoff solenoid
Rated speed rpm : 2200 Del. quantity	- Volt : 12
cm3/1000 strokes : 23.0 - Tolerance	- Rated speed rpm : 500 - Supply pomp
cm3/1000 str. +: 1.0	pressure bar : 5.5
Shutoff solenoid	Tolerance bar + : 0.3
Volt : 12	- Shutoff solenoid - Volt : 12
STARTING FUEL DELIVERY	•
Rated speed rpm : 100	- Rated speed rpm : 1000
Rated speed rpm : 100 + Del. quantity + The speed rpm : 100 + The	- Supply pomp - pressure bar : 6.7
cm3/1000 strokes : 45.0	- Tolerance bar + : 0.3
Tolerance	- Shutoff solenoid
cm3/1000 str. +-: 20.0	- Volt : 12
Volt : 12	- OVERFLOW QUANTITY
I	- Rated speed rpm : 500
+	- Overflow quantity
	- ccm/10s : 119.4 - Tolerance
INJECTION—PUMP TEST SPECIFICATIONS	- ccm/10s +-: 22.2
TIMING DEVICE CHARACTERISTIC	- Check tolerance
Date d annual an	- ccm/10s + : 22.2
Rated speed rpm : 2000	- Shutoff solenoid - Volt : 12
SV travel mm : 5.3	. 12
Tolerance mm ←: 3.4	Rated speed rpm : 1950
Check tolerance mm +: 0.9	Overflow quantity
tolerance mm +: 0.9  Shutoff solenoid	- ccm/10s : 150.0 - Tolerance
Volt : 12	ccm/10s + : 34.7
+	•
Rated speed rpm : 1000	- Check tolerance - ccm/10s +-: 34.7
SV travel mm : 1.7	Shutoff solenoid
Tolerance mm + : 0.4	- Volt : 12
Check	
tolerance mm +: 0.9	DELIVERY AND BREAKAWAY CHARACTERISTIC
Yolt : 12	Rated speed rpm : 2200
+	Del. quantity
Rated speed rpm : 500 +	- cm3/1000 strokes : 23.0
SV travel mm : 2.9	- Tolerance - cm3/1000 str. +-: 1.0
Tolerance mm +: 0.1	Check tolerance
Check	-cm3/1000s. +-: 5.0
tolerance mm +-: 0.6	Shutoff solenoid
Shutoff solenoid + 12 + 12	· Volt : 12
. 12	Rated speed rpm : 2140
SUPPLY PUMP PRESSURE CHARACTERISTIC +	· · · · · · · · · · · · · · · · · · ·

Del. quantity		+ Rated speed rpm : 425
cm3/1000 strokes :	29.5	+ Del. quantity
Tolerance		+ cm3/1000 strokes : 1.5
cm3/1000 str. +-:	3.0	+ Tolerance
Check tolerance		+ cm3/1000 str. +-: 1.5
cm3/1000s. +:	6.0	+ Check tolerance
Shutoff solenoid		+  cm3/1000s. + : 1.5
Volt :	12	+ Spread_
	0770	+ cm3/1000 strokes : 5.0
Rated speed rpm :	2330	†
Del. quantity		+ FULL-LOAD STOP CONTROL LEVER
cm3/1000 strokes :	4.0	
Tolerance		Rated speed rpm : 425
cm3/1000 str. +-:	4.0	+ Del. quantity
Check tolerance		+ cm3/1000 strokes : 1.5
cm3/1000s. +:	4.0	+ Tolerance
Shutoff solenoid	13	+ cm3/1000 str. + : 1.5
Volt :	12	+ Spread + cm3/1000 strokes : 5.0
Aneroid pressure		+ cm3/1000 strokes : 5.0 + Check tolerance
hPa :		
1112		+ cm3/1000s. +-: 1.5 + Spread
LDA/		- cm3/1000 strokes : 5.0
HBA stroke mm :	7.7	CIII37 1000 3C1 0KC3 . 3.0
	• • •	IDLE DELIVERY
Rated speed rpm :	1950	
Del. quantity		+ Rated speed rpm : 500
cm3/1000 strokes :	37.0	+ Del. quantity
Tolerance		+ cm3/1000 strokes : 3.0
cm3/1000 str. +-:	1.2	Tolerance
Check tolerance		+ cm3/1000 str. + : 3.0
cm3/1000s. +-:	2.5	+ Check tolerance
Shutoff solenoid		+  cm3/1000s. + : 3.0
Volt :	12	+ Shutoff solenoid
Destant expenses areas	1700	+ Volt : 12
Rated speed rpm : Del. quantity	1700	†
cm3/1000 strokes :	37.5	Ť
Tolerance	31.3	Ī
cm3/1000 str. +:	1.2	I
Check tolerance	1.6	
cm3/1000s. +:	2.5	+ EXHAUST-GAS RECIRCULATION
Shutoff solenoid		
Volt :	12	Rated speed rpm : 1250
		+ Del. quantity
Rated speed rpm :	5 <b>00</b>	+ cm3/1000 strokes : 21.3
Del. quantity		+ Tolerance
cm3/1000 strokes :	25.5	+ cm3/1000 str. $+$ : 0.5
Tolerance		+ Check tolerance
cm3/1000 str. +:	0.2	+ cm3/1000s. +-: 2.5
Check tolerance	7.0	+ Shutoff solenoid
cm3/1000s. + :	3.0	+ Volt : 12
Shutoff solenoid	12	CTART TRANSITION
Volt :	12	T START TRANSITION
		Rated speed rpm : 480
	<del></del>	Del. quantity
ELECTR. SHUTOFF		- cm3/1000 strokes : 26.0
CONTROL LEVER, IDLE	STOP	Tolerance
	- · <del>- ·</del>	+ cm3/1000 str. +-: 6.0
		1

Shutoff solenoid

Volt 12

Rated speed rpm : 300

Del. quantity cm3/1000 strokes : 48.0

Tolerance

cm3/1000 str. +-: 15.0

Shutoff solenoid

Volt 12

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm 7.7

HBA stroke mm : 2,8 Tolerance mm + : +0,1Dimension KF mm : 5,4 Tolerance mm + : +0.2Dimension MS mm : 1,8 Tolerance mm +:+0.2KSB travel mm

: 10,0 : 2,5 TLA travel mm

**MICROSWITCH** SET

: ARF 20,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 42,8..45,8

Control lever

position YB mm : 59,5..71,5

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.95 Test oil : ISO 4113

Part no. : 0 460 414 113 Pump designation : VE4/11F2000R557-1

Customer-spec. information
Customer : FORD
Motor : 2.5L DI
Power KW : 51.0

#### TEST BENCH REQUIREMENTS

Calibrating—oil return

temperature °C : 45 Tolerance °C +- : 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 114

Opening pressure

bar : 207 Tolerance bar + : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

#### REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,52
Tolerance mm +-: +-0,05
Outlet : B KDEP1151

## INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.5
Tolerance mm → : 0.1
Shutoff solenoid
Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Supply pomp
pressure bar : 7.4
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1150 Rated speed rpm : 1950 Del. quantity cm3/1000 strokes : Del. quantity cm3/1000 strokes : 41.5 Tolerance cm3/1000 str. + : 0.5Tolerance cm3/1000 str. +-: 0.2 Spread cm3/1000 strokes : 3.0 Shutoff solenoid Volt 12 Shutoff solenoid Volt 12 Check tolerance cm3/1000s. 4.0 •

## IDLE SETTING

cm3/1000s.

Rated speed rpm : 425
Del. quantity
cm3/1000 strokes : 7.0
Tolerance
cm3/1000 str. +- : 7.0
Shutoff solenoid
Volt : 12
Spread
cm3/1000 strokes : 3.0
Check tolerance

4.0

	Rated speed rpm : 2000 Supply pomp
	pressure bar : 9.0
FULL-LOAD SPEED REGULATION	Tolerance bar + : 0.3 Shutoff solenoid
Rated speed rpm : 2200 Det. quantity	+ Volt : 12
cm3/1000 strokes : 26.0 Tolerance	+ Rated speed rpm : 500 + Supply pomp
cm3/1000 str. +-: 1.0	pressure bar : 5.7
Shutoff solenoid	† Tolerance bar + : 0.3
Volt : 12	+ Shutoff solenoid - Volt : 12
STARTING FUEL DELIVERY	+
Rated speed rpm : 100	+ Rated speed rpm : 1150 - Supply pomp
Del. quantity cm3/1000 strokes : 45.0	+ pressure bar : 7.2 + Tolerance bar +-: 0.3
Tolerance	- Shutoff solenoid
cm3/1000 str. + : 20.0	+ Volt : 12
Shutoff solenoid Volt : 12	OVERFLOW QUANTITY
	Rated speed rpm : 1950 Overflow quantity
	ccm/10s : 150.0
INJECTION—PUMP TEST SPECIFICATIONS	ccm/10s + : 34.7
TIMING DEVICE CHARACTERISTIC	Check tolerance
Rated speed rpm : 2000	Shutoff solenoid Volt : 12
SV travel mm : 5.8	12
Tolerance mm +-: 0.4	Rated speed rpm : 500
Check	Overflow quantity
tolerance mm + : 0.9	ccm/10s : 119.4
Shutoff solenoid	+ Tolerance
Volt : 12	ccm/10s +-: 22.2
Rated speed rpm : 1000	Check tolerance
	ccm/10s + : 22.2
SV travel mm : 1.3	Shutoff solenoid
Tolerance mm + : 0.4 Check	+ Volt : 12
tolerance mm +: 0.9 Shutoff solenoid	DELIVERY AND BREAKAWAY CHARACTERISTIC
Volt : 12	Rated speed rpm : 2200 Del. quantity
Rated speed rpm : 500	cm3/1000 strokes : 26.0 Tolerance
SV travel mm : 2.9	+ cm3/1000 str. + : 1.0
Tolerance mm + : 0.1 Check	Check tolerance cm3/1000s. + : 5.0
tolerance mm +: 0.6	Shutoff solenoid
Shutoff solenoid : 12	Volt : 12
SUPPLY PUMP PRESSURE CHARACTERISTIC	Rated speed rpm : 2300
DOLLET LOUIS LIFEDOUSE CHANGLENTOLIC	

Del. quantity		40.0	+	Del. quantity		
cm3/1000 strokes Check tolerance	:	12.0	†	cm3/1000 strokes : Tolerance	1.5	
cm3/1000s. +-	:	6.0	Ī	cm3/1000 str. +-:	1.5	
Shutoff solenoid	•	010	1	Check tolerance	1.0	
Volt	:	12	+	cm3/1000s. +-:	1.5	
		24.00	+	Spread		
Rated speed rpm Del. quantity	:	2400	†	cm3/1000 strokes :	5.0	
cm3/1000 strokes	:	2.5	I	FULL-LOAD STOP CONTRO	OL LEVER	
Tolerance			1	1022 2075 0701 00777	oc ceven	
cm3/1000 str. +-	:	2.5	+	Rated speed rpm :	425	
Check tolerance	,	2.5	†	Del. quantity	4 -	
cm3/1000s. +-	:	2.5	Ī	cm3/1000 strokes : Tolerance	1.5	
Volt	:	12	I	cm3/1000 str. +-:	1.5	
			+	Spread		
Aneroid pressure			+	cm3/1000 strokes :	5.0	
hPa			†	Check tolerance cm3/1000s. +-:	4.5	
LDA/			I	cm3/1000s. +-: Spread	1.5	
HBA stroke mm	:	7.2	+	cm3/1000 strokes :	5.0	
			+			
Rated speed rpm Del. quantity	:	1700	†	IDLE DELIVERY		
cm3/1000 strokes	•	41.0	Ī	Rated speed rpm :	500	
Tolerance	•	*****	+	Del. quantity	300	
cm3/1000 str. +	:	1.2	+	cm3/1000 strokes :	3.0	
Check tolerance		2 -	†	Tolerance	7.0	
cm3/1000S. + Shutoff solenoid	•	2.5	Ī	cm3/1000 str. +-: Check tolerance	3.0	
Volt	:	12	I	cm3/1000s. +-:	3.0	
			+	Shutoff solenoid		
Rated speed rpm	:	500	+	Volt :	12	
Del. quantity cm3/1000 strokes	•	28.5	1			
Tolerance	•	20.5	Į			
cm3/1000 str. +	:	3.0	+			
Check tolerance		, 6	+			
cm3/1000s. +- Shutoff solenoid	:	4.0	<u>†</u>	EXHAUST-GAS RECIRCULA	ATTON	
Volt	:	12	Į	EVUNOSI AND MECTACOF	41 TON	
			+	Rated speed rpm :	1250	
Rated speed rpm	:	1950	†	Del. quantity	00.5	
Del. quantity cm3/1000 strokes		41.5	İ	cm3/1000 strokes : Tolerance	22.5	
Tolerance	•	71.3	Į	cm3/1000 str. +-:	0.5	
cm3/1000 str. +-	:	0.2	+	Check tolerance		
Check tolerance			+	cm3/1000s. +-:	2.5	
cm3/1000s. + Shutoff solenoid	:	3.0	†	Shutoff solenoid Volt :	12	
Volt	:	12	Į	vott .	12	
	•		+	START TRANSITION		
			+		4.00	
ELECTR. SHUTOFF				Rated speed rpm :	480	
CONTROL LEVER, IDL	E SI	ГОР	I	Del. quantity cm3/1000 strokes :	26.0	
	(		1	Tolerance	20.0	
Rated speed rpm	:	425	+	cm3/1000 str. +-:	6.0	

Shutoff solenoid

12 Volt

Rated speed rpm : 300

Del. quantity

cm3/1000 strokes : 48.0

Tolerance

cm3/1000 str. +-: 15.0

Shutoff solenoid

Volt 12

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm 7.2

HBA stroke mm : 2,8 Tolerance mm +: +0,1 Dimension KF mm : 5,4 Tolerance mm +:+0.2Dimension MS mm : 1,8 Tolerance mm +: +-0,2 : 10,0 KSB travel mm

: 2,5 TLA travel mm

## CONTROL LEVER POSITION

SET

Control lever

position YA mm : 41,0..44,0

Control lever

position YB mm : 63,0..75,0

BOSCH INJ. PUMP TE	ST SPECIFICATIONS
Note remarks	
Refer to Service I adjustment instruc See microcard(s) W	tions.
Edition Test oil	: 02.05.96 : ISO 4113
Part no. Pump designation	: 0 460 484 078 : VE4/8F2500R611
Customer-spec. inf	ormation : PSA
	: TUD 5-L : 42.0
rower Nw	. 42.0
TEST BENCH REQUIRE	MENTS
Calibrating-oil	
return temperature *C	: 45
Tolerance °C +	: 1
Overflow restriction mm	: 0.55
Inlet press. bar Tolerance bar +-	: 0.35
TO GOT GITTO DOT	. 0.03
Test nozzle holde assembly	: 1 688 901 022
Opening pressure	470
bar Tolerance bar +-	: 130 : 3
Test lines	: 1 680 750 073
Outside diameter	: 6.00
x inside diameter x length mm	: 2.00 : 450
REMARKS	

Plunger stroke mm : 0,8 Tolerance mm : +0,02					
Outlet	: A	ı			
INJECTION PUMP SETTING VALUES					
TIMING DEVICE TRA	/EL				
Rated speed rpm	:	1500			
Setting mm Tolerance mm ← Shutoff solenoid	:	5.0 0.2			
Volt	:	12			
SUPPLY PUMP PRESS	JRE				
Rated speed rpm Supply pomp	:	1500			
pressure bar	:	6.3			
Tolerance bar +- Shutoff solenoid	:	0.3			
Volt	:	12			
FULL-LOAD DELIV. WITHOUT BOOST PRESSURE					
Rated speed rpm Del. quantity	:	1500			
cm3/1000 strokes Tolerance	:	24.0			
cm3/1000 str. +-	:	0.5			
cm3/1000 strokes	:	2.0			
Shutoff solenoid Volt	:	12			
HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING					
Rated speed rpm Del. quantity	:	500			
cm3/1000 strokes Tolerance	:	2.0			
cm3/1000 str. +-	:	0.5			
Shutoff solenoid Volt	:	12			
IDLE DELIVERY					
Rated speed rpm Del. quantity	:	350			
cm3/1000 strokes Tolerance	:	12.0			
cm3/1000 str. +-	:	1.0			
Spread cm3/1000 strokes	:	2.0			

BEGINNING OF DELIVERY

Start of delivery blocking

Shutoff solenoid Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
HIGH IDLE SETTING	Rated speed rpm : 2200 Supply pomp
Rated speed rpm : 475 Del. quantity - cm3/1090 strokes : 12.0	pressure bar : 8.1 Tolerance bar + : 0.3 Shutoff solenoid
Yolerance : 1.0	- Volt : 12
Shutoff solenoid Volt : 12	Rated speed rpm : 800 Supply pomp
FULL-LOAD SPEED REGULATION	pressure bar : 4.6 Tolerance bar +: 0.3
+	Shutoff solenoid
Rated speed rpm : 2650 Del. quantity	Volt : 12
cm3/1000 strokes : 12.0 - Tolerance -	OVERFLOW QUANTITY
cm3/1000 str. +-: 2.0 Shutoff solenoid	Rated speed rpm : 2450 Overflow quantity
Volt : 12	ccm/10s : 97.2 Tolerance
SET GRADUATED STARTING DELIVERY	- ccm/10s +-: 41.5
CONTROL LEVER, IDLE STOP	Check tolerance
Rated speed rpm : 200	ccm/10s + : 41.6 Shutoff solenoid
Del. quantity cm3/1000 strokes : 40.0	Volt : 12
Tolerance - 1.0	Rated speed rpm : 600 Overflow quantity
Shutoff solenoid	ccm/10s : 63.8
Volt : 12	Tolerance - ccm/10s ←: 22.2
1	Check tolerance
	- ccm/10s + : 22.2
INJECTION—PUMP TEST SPECIFICATIONS	Shutoff solenoid
TIMING DEVICE CHARACTERISTIC	- <b>Volt</b> : 12
Rated speed rpm : 2200	DELIVERY AND BREAKAWAY CHARACTERISTIC
SV travel mm : 8.3	- Rated speed rpm : 2650 - Del. quantity
Tolerance mm + : 0.4 Check	- cm3/1000 strokes : 12.0 - Tolerance
tolerance mm +: 0.7 Shutoff solenoid	- cm3/1000 str. +-: 2.0 - Check tolerance
Volt : 12	- cm3/1000s. $+-$ : 4.0
Rated speed rpm : 800	- Shutoff solenoid - Volt : 12
SV travel mm : 1.6	- Rated speed rpm : 2580
Tolerance mm + : 0.4 Check	Del. quantity cm3/1000 strokes : 20.0
tolerance mm + : 0.7 Shutoff solenoid	- Tolerance - cm3/1000 str. +-: 3.0
Volt : 12	- Check tolerance - cm3/1000s. +-: 5.0
Т	3m2/10000 ·

Shutoff solenoid	40	+ Rated speed rpm : 350
Volt	: 12	+ Del. quantity + cm3/1000 strokes : 1.5
Rated speed rpm : Del. quantity	2800	+ Tolerance
cm3/1000 strokes	1.5	+ cm3/1000 str. + : 1.5 + Check tolerance
Tolerance cm3/1000 str. 4- :	1.5	+ cm3/1000s. +-: 1.5 + Spread
Check tolerance		cm3/1000 strokes : 5.0
cm3/1000s. + : Shutoff solenoid	: 1.5	FULL-LOAD STOP CONTROL LEVER
Volt	: 12	+
	2450	+ Del. quantity
Del. quantity cm3/1000 strokes :	26.0	+ cm3/1000 strokes : 1.5 + Tolerance
Tolerance		cm3/1000 str. + : 1.5
cm3/1000 str. +-:		+ Spread + cm3/1000 strokes : 5.0
cm3/1000s. +-: Shutoff solenoid	2.2	+ Check tolerance + cm3/1000s. + : 1.5
Volt :	12	Spread
Rated speed rpm :	600	cm3/1000 strokes : 5.0
Del. quantity cm3/1000 strokes :	25.5	†
Tolerance		Ŧ
cm3/1000 str. + : Check tolerance	1.5	‡
cm3/1000s. +-: Shutoff solenoid	3.0	TARE TRANSPERSU
Volt :	12	+ START TRANSITION
Rated speed rpm :	1500	+ Rated speed rpm : 340 + Del. quantity
Del. quentity		+ cm3/1000 strokes : 22.5
cm3/1000 strokes : Tolerance	24.0	+ Tolerance + cm3/1000 str. +-: 10.0
<pre>cm3/1000 str. + : Check tolerance</pre>	0.5	+ Shutoff solenoid + Volt : 12
cm3/1000s. +-:	2.2	T VOCC . 12
Shutoff solenoid Volt :	12	+ Rated speed rpm : 250
		Del. quantity 
MECHANICAL SHUTOFF		+ Tolerance
Rated speed rpm :	2450	+ cm3/1000 str. +-: 17.0 + Shutoff solenoid
Del. quantity		Volt : 12
cm3/1000 strokes : Tolerance		
<pre>cm3/1000 str. +-: Check tolerance</pre>	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000s. +-:	1.5	Dimension K mm : 3,7
Shutoff solenoid Volt :	12	Tolerance mm + : +-0,1 Dimension KF mm : 6,0
		+ Tolerance mm +-: +-0,2
ELECTR. SHUTOFF		Dimension MS mm : 1,0 Tolerance mm + : +-0,2
CONTROL LEVER, IDLE	STOP	+

CONTROL LEVER POSITION SET

Control lever

position YA mm : 32,0..36,0

Control lever position YB mm : 26,0..35,0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.12.95 Test oil : ISO 4113

Part no. : 0 460 484 105 Pump designation : VE4/8F2500R611-3

Customer—spec. information Customer : PSA Motor : TUD5-L4 Power KW : 42.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,75
Tolerance mm + : +-0,02

Outlet : A

## INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 5.G Tolerance mm +-: 0.2 Shutoff solenoid Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Supply pomp
pressure bar : 6.3
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : 24.0
Tolerance
cm3/1000 str. + : 0.5
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 2.0
Tolerance
cm3/1000 str. +-: 0.5
Shutoff solenoid
Volt : 12

## IDLE DELIVERY

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 str. + : 1.0
Spread
cm3/1000 strokes : 2.0

Shutoff solenoid Volt : 12	+ Rated speed rpm : 2450
	T SV travel mm : 9.8
HIGH IDLE SETTING	+ Tolerance mm +-: 0.3
Rated speed rpm : 475 Del. quantity	SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 strokes : 12.0 Tolerance	Rated speed rpm : 2200 Supply pomp
cm3/1000 str. +-: 1.0 Shutoff solenoid	pressure bar : 8.1 Tolerance bar +-: 0.3
Volt : 12	+ Shutoff solenoid
FULL-LOAD SPEED REGULATION	† Volt : 12
Rated speed rpm : 2650	+ Rated speed rpm : 800 + Supply pomp
Del. quantity	pressure bar : 4.6
cm3/1000 strokes : 12.0 Tolerance	+ Tolerance bar + : 0.3 + Shutoff solenoid
cm3/1000 str. +-: 2.0 Shutoff solenoid	+ Volt : 12
Volt : 12	OVERFLOW QUANTITY
CET CRANIATED GTARTING DELIVERY	Rated speed rpm : 2450
SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP	+ Overflow quantity + ccm/10s : 97.2
Rated speed rpm : 200	+ Tolerance + ccm/10s +-: 41.6
Del. quantity	+
cm3/1000 strokes : 40.0 Tolerance	+ Check tolerance + ccm/10s + : 41.6
cm3/1000 str. +-: 1.0 Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+
	+ Rated speed rpm : 600 + Overflow quantity
	+ ccm/10s : 63.8 + Tolerance
INJECTION-PUMP TEST SPECIFICATIONS	ccm/10s + : 22.2
TIMING DEVICE CHARACTERISTIC	Check tolerance
Rated speed rpm : 2200	+ ccm/10s + : 22.2 + Shutoff solenoid
SV travel mm : 8.3	+ Volt : 12
Tolerance mm +-: 0.4 Check	DELIVERY AND BREAKAWAY CHARACTERISTIC
tolerance mm + : 0.7 Shutoff solenoid	Rated speed rpm : 2650
Volt : 12	+ Del. quantity + cm3/1000 strokes : 12.0 + Tolerance
Rated speed rpm : 800	cm3/1000 str. +: 2.0 Check tolerance
SV travel mm : 1.6	+  cm3/1000s. + : 4.0
Tolerance mm + : 0.4 Check	+ Shutoff solenoid + Volt : 12
tolerance mm + : 0.7 Shutoff solenoid	+ Rated speed rpm : 2580
Volt : 12	Del. quantity  cm3/1000 strokes : 20.0
	T CHIST TOOD SCHOKES : 20.0

Tolerance	1	
cm3/1000 str. +-:	3.0	
Check tolerance	3.0 I	ELECTR. SHUTOFF
cm3/1000s. +:	5.0	CONTROL LEVER, IDLE STOP
Shutoff solenoid	1	SCHINGE CEVERY IDEE STOP
Volt :	12	Rated speed rpm : 350
	1	Del. quantity
Rated speed rpm :	2800	cm3/1000 strokes : 1.5
Del. quantity		Tolerance
cm3/1000 strokes :	1.5	cm3/1000 str. +-: 1.5
Tolerance	1	Check tolerance
cm3/1000 str. +-:	1.5	cm3/1000s. +-: 1.5
Check tolerance	1	
cm3/1000s. +-:	1.5	FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid	1	
Volt :	12	Rated speed rpm : 350
	+	Del. quantity
Rated speed rpm :	2450	cm3/1000 strokes : 1.5
Del. quantity	+	Tolerance
cm3/100C strokes :	25.5	cm3/1000 str. +-: 1.5
Tolerance	+	Check tolerance
cm3/1000 str. +-:	1.0	cm3/1000s. +-: 1.5
Check tolerance	+	
cm3/1000s. +-:	2.2	
Shutoff solenoid	+	
Volt :	12	
<b>5</b>	+	
Rated speed rpm :	600 +	
	_1_	
Del. quantity	35 5 T	
cm3/1000 strokes :	25.5	EXHAUST-GAS RECIRCULATION
cm3/1000 strokes : Tolerance	+	
cm3/1000 strokes : Tolerance cm3/1000 str. + :	25.5	Rated speed rpm : 1250
cm3/1000 strokes : Folerance cm3/1000 str. +- : Check tolerance	1.5	Rated speed rpm : 1250 Del. quantity
cm3/1000 strokes : Folerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	+	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0
cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid	1.5	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance
cm3/1000 strokes : Folerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	1.5	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. +-: 1.0
cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Yolt :	1.5	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance
cm3/1000 strokes: Folerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt : Rated speed rpm :	1.5	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 4.0
cm3/1000 strokes: Folerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt : Rated speed rpm : Del. quantity	1.5 3.0 12 1500	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid
cm3/1000 strokes: Folerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes:	1.5	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 4.0
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance	1.5 3.0 12 1500 24.0	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +:	1.5 3.0 12 1500	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance	1.5 3.0 12 1500 24.0 0.5	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  START TRANSITION
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	1.5 3.0 12 1500 24.0	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance	1.5 3.0 12 1500 24.0 0.5	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340 Del. quantity
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid	1.5 3.0 12 1500 24.0 0.5 2.2	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340 Del. quantity
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid	1.5 3.0 12 1500 24.0 0.5 2.2	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 22.5
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid	1.5 3.0 12 1500 24.0 0.5 2.2	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. +- : 1.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 22.5 Tolerance cm3/1000 str. +- : 10.0 Shutoff solenoid
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  MECHANICAL SHUTOFF	1.5 3.0 12 1500 24.0 0.5 2.2	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 22.5 Tolerance cm3/1000 str. + : 10.0
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  MECHANICAL SHUTOFF  Rated speed rpm:	1.5 3.0 12 1500 24.0 0.5 2.2	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. +- : 1.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 22.5 Tolerance cm3/1000 str. +- : 10.0 Shutoff solenoid
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  MECHANICAL SHUTOFF  Rated speed rpm: Del. quantity	1.5 3.0 12 1500 24.0 0.5 2.2 12	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 22.5 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  MECHANICAL SHUTOFF  Rated speed rpm: Del. quantity cm3/1000 strokes:	1.5 3.0 12 1500 24.0 0.5 2.2	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 22.5 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12  Rated speed rpm : 250
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  MECHANICAL SHUTOFF  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance	1.5 3.0 12 1500 24.0 0.5 2.2 12 2450 1.5	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 22.5 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12  Rated speed rpm : 250 Del. quantity
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  MECHANICAL SHUTOFF  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes:	1.5 3.0 12 1500 24.0 0.5 2.2 12	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 22.5 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12  Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 52.0
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000s. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  MECHANICAL SHUTOFF  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes:	1.5 3.0 12 1500 24.0 0.5 2.2 12 2450 1.5 1.5	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 22.5 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12  Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 52.0 Tolerance
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000s. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  MECHANICAL SHUTOFF  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes:	1.5 3.0 12 1500 24.0 0.5 2.2 12 2450 1.5	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 22.5 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12  Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 strokes : 52.0 Tolerance cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 17.0
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000s. +: Shutoff solenoid Volt:  MECHANICAL SHUTOFF  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000s. +: Shutoff solenoid Volt:  MECHANICAL SHUTOFF  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Shutoff solenoid	1.5 3.0 12 1500 24.0 0.5 2.2 12 2450 1.5 1.5	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. +- : 1.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 22.5 Tolerance cm3/1000 str. +- : 10.0 Shutoff solenoid Volt : 12  Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 strokes : 52.0 Tolerance cm3/1000 strokes : 52.0 Tolerance cm3/1000 strokes : 17.0 Shutoff solenoid
cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000s. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  MECHANICAL SHUTOFF  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes:	1.5 3.0 12 1500 24.0 0.5 2.2 12 2450 1.5 1.5	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 340 Del. quantity cm3/1000 strokes : 22.5 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12  Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 strokes : 52.0 Tolerance cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 17.0

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm + : +-0,1
Dimension KF mm : 6,0
Tolerance mm + : +-0,2
Dimension MS mm : 1,0
Tolerance mm + : +-0,2

## BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 30.11.95 Test oil : ISO 4113 : 0 460 414 119 Part no. Pump designation: VE4/11F2000R624 Customer—spec. information Customer : FORD Motor : 2.5L DI Power KW 56.0 TEST BENCH REQUIREMENTS Calibrating-oil return temperature °C 45 Tolerance °C +-: 1 Overflow restriction mm : 0.75 Inlet press. bar : 0.35 Tolerance bar + : 0.05 Test nozzle holde : 1 688 901 114 assembly Opening pressure bar 207 Tolerance bar +-: Test lines : 1 680 750 073 Outside diameter : 6.00 x inside diameter: 2.00 x length mm : 450 REMARKS

Plunger stroke mm Tolerance mm +- Outlet	: 0,52 : +-0,05 : B KDEP1151			
INJECTION PUMP SET	TTING VALUES			
TIMING DEVICE TRA	VEL			
Rated speed rpm	: 1250			
Setting mm Tolerance mm +-	: 2.7 : 0.1			
Shutoff solenoid				
Volt	: 12			
SUPPLY PUMP PRESSU	JRE			
Rated speed rpm Supply pomp				
pressure bar Tolerance bar +-	: 7.2 : 0.3			
Shutoff solenoid	: 0.3			
Volt	: 12			
FULL-LOAD DELIV. WITHOUT BOOST PRESSURE				
Rated speed rpm				
Rated speed rpm Del. quantity	: 500			
cm3/1000 strokes	: 34.0			
Del. quantity cm3/1000 strokes	. 25.5			
Tolerance	: 25.5			
cm3/1000 str. +-	: 0.5			
Tolerance cm3/1000 str. +-	: 0.2			
Spread cm3/1000 strokes	. 70			
Shutoff solenoid	: 3.0			
Volt	: 12			
Shutoff solenoid Volt	: 12			
Check tolerance cm3/1000s.	: 4.0			
CIII3/ 10003.	: 4.0			
IDLE SETTING				
Rated speed rpm	: 425			
Del. quantity cm3/1000 strokes	: 9.0			
Tolerance				
cm3/1000 str. +- Shutoff solenoid	: 1.0			
Volt	: 12			
Spread cm3/1000 strokes	: 3.0			
Check tolerance	4.0			

cm3/1000s.

:

4.0

BEGINNING OF DELIVERY

Start of delivery blocking

	1	Supply pomp		
	I	pressure bar	•	5.5
	1	Tolerance bar +-	•	0.3
	1	Shutoff solenoid	•	0.5
FULL-LOAD SPEED REGULATI	on	Volt	:	12
Rated speed rpm : 22 Del. quantity	000	Rated speed rpm Supply pomp	:	1000
	23.0	pressure bar		6.7
Tolerance	1	Tolerance bar +-	•	0.3
cm3/1000 str. +-:	1.0	Shutoff solenoid	•	0.5
Shutoff solenoid	1	Volt	:	12
Volt :	12		•	
	+	OVERFLOW QUANTITY		
STARTING FUEL DELIVERY	+			
	+	Rated speed rpm	:	500
	00 +	Overflow quantity		
Del. quantity	t	ccm/10s	:	119.4
	45.0	Tolerance		22.2
Tolerance cm3/1000 str. +-:	20.0	ccm/10s +-	:	22.2
Shutoff solenoid	I	Check tolerance		
Volt :	12	ccm/10s +-	•	22.2
	1	Shutoff solenoid	•	
	<del>}</del>	Volt	:	12
	+			
	+	Rated speed rpm	:	1950
		Overflow quantity		
INJECTION-PUMP TEST SPEC	IFICATIONS +	ccm/10s	:	150.0
TIMING DEVICE CHARACTERI	STIC T	Tolerance ccm/iOs +		71 7
ITHING DEVICE CHARACTERI	I	CCM/ TOS +3	•	34.7
Rated speed rpm : 20	00 1	Check tolerance		
	1	ccm/10s +	:	34.7
SV travel mm :	5.5	Shutoff solenoid		
Tolerance mm +-:	0.4	Volt	:	12
Check	+			
tolerance mm +-:	0.9	DELIVERY AND BREAK	(AWA)	Y CHARACTERISTIC
Shutoff solenoid	†			0000
Volt :	12	Rated speed rpm	:	2200
Rated speed rpm : 10	nn T	Del. quantity cm3/1000 strokes		23.0
rated speed right : 10	w I	Tolerance	•	23.0
SV travel mm :	1.7	cm3/1000 str. +-	•	1.0
Tolerance mm + :	0.4	Check tolerance	•	•••
Check	+	cm3/1000s. +-	:	5.0
tolerance mm +:	0.9	Shutoff solenoid		
Shutoff solenoid	+	Volt	:	12
Volt :	12			04/0
CUDDLY DIMO DOCCCUDE CHA	DACTEDICTIC	Rated speed rpm	:	2140
SUPPLY PUMP PRESSURE CHA	MACIENTO T	Del. quantity cm3/1000 strokes		29.5
Rated speed rpm : 20	$_{00}$ I	Tolerance	•	L7.J
Supply pomp	1	cm3/1000 str. +	:	3.0
pressure bar :	8.9	Check tolerance	-	
Tolerance bar + :	0.3	cm3/1000s. +-	:	6.0
Shutoff solenoid	+	Shutoff solenoid		
Volt :	12 +	Volt	:	12
Dated speed now : El	no †	Datad amand		2/00
Rated speed rpm : 50	00 +	Rated speed rpm	:	2400

Del. quantity		+	
cm3/1000 strokes	: 2.5	+ FULL-LOAD STOP CONTR	OL LEVER
Tolerance		+	227277
cm3/1000 str. +	: 2.5	+ Rated speed rpm :	425
Check tolerance		Pel. quantity	122
cm3/1000s. +-	: 2.5	cm3/1000 strokes :	1.5
Shutoff solenoid		Tolerance	1.0
Volt	: 12	cm3/1000 str. +-:	1.5
VOC C	. 12		1.5
Amenadal amanassas		+ Spread	5.0
Aneroid pressure		cm3/1000 strokes :	5.0
hPa	:	+ Check tolerance	
		+ cm3/1000s. $+$ :	1.5
LDA/		+ Spread	
MBA stroke mm	: 7.7	+ cm3/1000 strokes :	5.C
		+	
Rated speed rpm	: 1950	→ IDLE DELIVERY	
Del. quantity		<del> </del>	
cm3/1000 strokes	: 37.0	Rated speed rpm :	500
Tolerance		+ Del. quantity	7.00
cm3/1000 str. +-	: 1.2	+ cm3/1000 strokes :	3.0
Check tolerance		+ Tolerance	0.0
cm3/1000s. +-	: 2.5	+ cm3/1000 str. +-:	3.0
Shutoff solenoid		Check tolerance	3.0
	: 12	- cm3/1000s. +-:	3.0
7011	• ''	Shutoff solenoid	3.0
Rated speed rpm	: 1700	+ Volt :	12
Del. quantity	. 1700	T volt	12
cm3/1000 strokes	: 38.0	Ť	
	: 56.0	Ť	
Tolerance		t	
cm3/1000 str. +-	: 1.2	†	
Check tolerance		<u>†</u>	
cm3/1000s. +-	: 2.5		
cm3/1 <b>00</b> 0s. +- Shutoff solenoid		EXHAUST-GAS RECIRCUL	ATION
cm3/1000s. +-	: 2.5 : 12	EXHAUST-GAS RECIRCUL	ATION
cm3/1000s. +- Shutoff solenoid Volt	: 12	EXHAUST—GAS RECIRCUL Rated speed rpm :	
cm3/1000s. +- Shutoff solenoid Volt		Rated speed rpm : Del. quantity	1250
cm3/1000s. +- Shutoff solenoid Volt	: 12	Rated speed rpm : Del. quantity	1250
cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm	: 12 : 500	Rated speed rpm :	1250
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes	: 12 : 500	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance	1250
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 12 : 500 : 25.5	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + :	1250
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 12 : 500 : 25.5	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance	1250 21.3 0.5
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 12 : 500 : 25.5 : 0.2	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	1250
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 12 : 500 : 25.5 : 0.2	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid	1250 21.3 0.5 2.5
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: 12 : 500 : 25.5 : 0.2 : 3.0	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	1250 21.3 0.5
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 12 : 500 : 25.5 : 0.2	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt :	1250 21.3 0.5 2.5
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: 12 : 500 : 25.5 : 0.2 : 3.0	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid	1250 21.3 0.5 2.5
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: 12 : 500 : 25.5 : 0.2 : 3.0	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt : START TRANSITION	1250 21.3 0.5 2.5 12
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: 12 : 500 : 25.5 : 0.2 : 3.0	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  START TRANSITION  Rated speed rpm :	1250 21.3 0.5 2.5
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF	: 12 : 500 : 25.5 : 0.2 : 3.0 : 12	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  START TRANSITION  Rated speed rpm : Del. quantity	1250 21.3 0.5 2.5 12
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: 12 : 500 : 25.5 : 0.2 : 3.0 : 12	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  START TRANSITION  Rated speed rpm : Del. quantity cm3/1000 strokes :	1250 21.3 0.5 2.5 12
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL	: 12 : 500 : 25.5 : 0.2 : 3.0 : 12	Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  START TRANSITION  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance	1250 21.3 0.5 2.5 12 480 26.0
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm	: 12 : 500 : 25.5 : 0.2 : 3.0 : 12	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  START TRANSITION  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + :	1250 21.3 0.5 2.5 12
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity	: 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  START TRANSITION  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid	1250 21.3 0.5 2.5 12 480 26.0 6.0
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes	: 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  START TRANSITION  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + :	1250 21.3 0.5 2.5 12 480 26.0
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  START TRANSITION  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid	1250 21.3 0.5 2.5 12 480 26.0 6.0
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  START TRANSITION  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid Volt :	1250 21.3 0.5 2.5 12 480 26.0 6.0
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  START TRANSITION  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  Rated speed rpm :	1250 21.3 0.5 2.5 12 480 26.0 6.0
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL: Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  START TRANSITION  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity	1250 21.3 0.5 2.5 12 480 26.0 6.0 12
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL: Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread	: 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5 : 1.5	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  START TRANSITION  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes :	1250 21.3 0.5 2.5 12 480 26.0 6.0 12
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL: Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5 : 1.5	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  START TRANSITION  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 strokes : Tolerance	1250 21.3 0.5 2.5 12 480 26.0 6.0 12 300 48.0
cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL: Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread	: 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5 : 1.5	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  START TRANSITION  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes :	1250 21.3 0.5 2.5 12 480 26.0 6.0 12 300 48.0

Shutoff solenoid Volt

: 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 7.7 Dimension K mm : 2,8 Tolerance mm +: +-0,1 Dimension KF mm : 5,4 Tolerance mm +: +0,2 Dimension MS mm : 1,8

Tolerance mm +:+0,2

**MICROSWITCH** SET

: ARF 20

CONTROL LEVER POSITION SET

Control lever

position YA mm : 42,8..45,8

Control Lever

position YB mm : 59,5..71,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.11.95 Test oil : ISO 4113

Part no. : 0 460 414 138 Pump designation : VE4/11F2000R624-2

Customer-spec. information Customer : FORD Motor : 2.5! DI Power KW : 56.0

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 114

Opening pressure

bar \*: 207
Tolerance bar +: 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,52
Tolerance mm : +-0,05
Outlet : B KDEP1151

#### INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.7
Tolerance mm +: 0.1
Shutoff solenoid
Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Supply pomp

pressure bar : 7.2
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1000 Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 34.0 Del. quantity cm3/1000 strokes : 25.5 Tolerance cm3/1000 str. +-: 0.5 Tolerance 0.2 cm3/1000 str. +-: Spread cm3/1000 strokes : 3.0 Shutoff solenoid Volt 12 Shutoff solenoid Volt 12 Check tolerance cm3/1000s. 4.0

#### IDLE SETTING

Rated speed rpm	:	425
Del. quantity cm3/1000 strokes	:	9.0
Tolerance cm3/1000 str. +-	:	1.0
Shutoff solenoid Volt	:	12
Spread cm3/1000 strokes	•	3.0
Check tolerance	•	/ 0
cm3/1000s.	:	4.0

	+ Supply pomp
	+ pressure bar : 5.5
	Tolerance bar +: 0.3
FULL LOAD COFFE PECH ATTON	+ Shutoff solenoid
FULL-LOAD SPEED REGULATION	+ Volt : 12
Rated speed rpm : 2200	Rated speed rpm : 1000
Del. quentity	Supply pomp
cm3/100G strokes : 23.0 Tolerance	pressure bar : 6.7
cm3/1000 str. +-: 1.0	Tolerance bar +: 0.3 Shutoff solenoid
Shutoff solenoid	Volt : 12
Volt : 12	. 12
	+ OVERFLOW QUANTITY
STARTING FUEL DELIVERY	+
	+ Rated speed rpm : 500
Rated speed rpm : 100	+ Overflow quantity
Del. quantity cm3/100G strokes : 45.0	+ ccm/10s : 119.4
Tolerance	+ Tolerance + ccm/10s + : 22.2
cm3/1000 str. + : 20.0	T
Shutoff solenoid	+ Check tolerance
Volt : 12	+ ccm/10s +-: 22.2
	+ Shutoff solenoid
	† Volt : 12
	1050
	+ Rated speed rpm : 1950 + Overflow quantity
INJECTION-PUMP TEST SPECIFICATIONS	+ ccm/10s : 150.0
ZITO ZOTE OF THE TEOT OF COLITIONS	+ Tolerance
TIMING DEVICE CHARACTERISTIC	+ ccm/10s +-: 34.7
	+
Rated speed rpm : 2000	+ Check tolerance
SV travel mm : 5.5	+ ccm/10s + : 34.7 + Shutoff solenoid
Tolerance mm +: 0.4	+ Volt : 12
Check	1
tolerance mm +-: 0.9	DELIVERY AND BREAKAWAY CHARACTERISTIC
Shutoff solenoid	+
Volt : 12	+ Rated speed rpm : 2200
4000	+ Del. quantity
Rated speed rpm : 1000	+ cm3/1000 strokes : 23.0
SV travel mm : 1.7	+ Tolerance + cm3/1000 str. +-: 1.0
Tolerance mm +-: 0.4	Check tolerance
Check	+ cm3/1000s. + : 5.0
tolerance mm + : 0.9	+ Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	†
CURRY NUMB RECOURS CHARACTERISTIC	+ Rated speed rpm : 2140
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Del. quantity + cm3/1000 strokes : 29.5
Rated speed rpm : 2000	+ Tolerance
Supply pomp	+ cm3/1000 str. + : 3.0
pressure bar : 8.9	- Check tolerance
Tolerance bar +-: 0.3	+ cm3/1000s. ←: 6.0
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
Rated speed rpm : 500	Rated speed rpm : 2400
C = 1 = 1	T ROLEU SUEEU CUD : CAUU

Del. quantity	1
cm3/1000 strokes : 2.5	FULL-LOAD STOP CONTROL LEVER
Tolerance cm3/1000 str. +-: 2.5	Rated speed rpm : 425
Check tolerance cm3/1000s. +-: 2.5	+ Del. quantity + cm3/1000 strokes : 1.5
Shutoff solenoid	+ Tolerance
Volt : 12	+ cm3/1000 str. + : 1.5 + Spread
Aneroid pressure hPa :	+ cm3/1000 strokes : 5.0 + Check tolerance
LDA/	cm3/1000s. + : 1.5 + Spread
HBA stroke mm : 7.7	cm3/1000 strokes : 5.0
Rated speed rpm : 1950	IDLE DELIVERY
Del. quantity cm3/1000 strokes : 37.0	Rated speed rpm : 500
Tolerance	- Del. quantity
cm3/1000 str. ←: 1.2 Check tolerance	+ cm3/1000 strokes : 3.0 + Tolerance
cm3/1000S. +-: 2.5 Shutoff solenoid	+ cm3/1000 str. ←: 3.0 + Check tolerance
Volt : 12	+ cm3/1000s. + : 3.0 - Shutoff solenoid
Rated speed rpm : 1700	Volt : 12
Del. quantity cm3/1000 strokes : 38.0	‡
Tolerance cm3/1000 str. ←: 1.2	‡
Check tolerance cm3/1000s. + : 2.5	<u> </u>
Shutoff solenoid	EXHAUST-GAS RECIRCULATION
Volt : 12	+ Rated speed rpm : 1250
Rated speed rpm : 500 Del. quantity	- Del. quantity - cm3/1000 strokes : 21.3
cm3/1000 strokes : 25.5	+ Tolerance
Tolerance cm3/1000 str. +-: 0.2	+ cm3/1000 str. +: 0.5 + Check tolerance
Check tolerance cm3/1000s. ←: 3.0	cm3/1000s. +-: 2.5 + Shutoff solenoid
Shutoff solenoid	Volt : 12
Volt : 12	START TRANSITION
	Rated speed rpm : 480
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	+ Del. quantity + cm3/1000 strokes : 26.0
	+ Tolerance
Rated speed rpm : 425 Del. quantity	+ cm3/1000 str. +-: 6.0 + Shutoff solenoid
cm3/1000 strokes : 1.5 Tolerance	+ Volt : 12
cm3/1000 str. +: 1.5	Poted speed 200
Check tolerance cm3/1000s. ←: 1.5	Rated speed rpm : 300  Del. quantity
Spread cm3/1000 strokes : 5.0	+ cm3/1000 strokes : 48.0 + Tolerance
	+ cm3/1000 str. +-: 15.0

Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 7.7 Dimension K mm : 2,8

Tolerance mm +: +0,1
Dimension KF mm : 8,4
Tolerance mm +: +0,2
Dimension MS mm : 1,8
Tolerance mm +: +0,2

MICROSWITCH SET

: ARF 20,0

CONTROL LEVER POSITION SET

Control lever

position YA mm: : 42,8..45,8

Control lever

position YB mm : 59,5..71,5

BOSCH INJ. PUMP TI	EST SPECIFICATIONS			
ುte remarks				
Refer to Service Info for test and adjustment instructions. See microcard(s) W400/				
Edition Test oil	: 09.05.96 : ISO 4113			
Part no. Pump designation	: 0 460 414 150 : VE4/11F20COR624-4			
Customer—spec. in Customer Motor Power KW	formation : FORD : 2.5l DI : 56.0			
TEST BENCH REQUIRE	EMENTS			
Calibrating-oil return temperature °C +-	: 45 : 1			
Overflow restriction mm	: 0.75			
Inlet press. bar Tolerance bar +-	: 0.35 : 0.05			
Test nozzle holde assembly	: 1 688 901 114			
Opening pressure bar Tolerance bar +-	: 207 : 3			
Test lines	: 1 680 750 073			
Outside diameter	: 6.00			
x inside diameter x length mm	: 2.00 : 450			
REMARKS				
BEGINNING OF DELIV	/ERY			

Plunger stroke mm : 0,52 Tolerance mm + : +-0,05 Outlet : B KDEP1151					
INJECTION PUMP SETTING VALUES					
TIMING DEVICE TRAVEL					
Rated speed rpm : 1250					
Setting mm : 2.7 Folerance mm +-: 0.1 Shutoff solenoid Volt : 12					
SUPPLY PUMP PRESSURE					
Rated speed rpm : 1250 Supply pomp pressure bar : 7.2					
Tolerance bar +-: 0.3 Shutoff solenoid					
Volt : 12					
FULL-LOAD DELIV. WITHOUT BOOST PRESSURE					
Rated speed rpm : 1000 Rated speed rpm : 500 Del. quantity					
cm3/1000 strokes : 34.0 Del. quantity					
cm3/1000 strokes : 25.5 Tolerance					
cm3/1000 str. +-: 0.5 Tolerance					
cm3/1000 str. +-: 0.2 Spread					
cm3/1000 strokes : 3.0 Shutoff solenoid					
Volt : 12 Shutoff solenoid					
Volt : 12 Check tolerance cm3/1000s. : 4.0					
IDLE SETTING					
Rated speed rpm : 425					
Del. quantity cm3/1000 strokes : 9.0					
Tolerance cm3/1000 str. + : 1.0					
Shutoff solenoid Volt : 12 Spread					
cm3/1000 strokes : 3.0 Check tolerance					
cm3/1000s. : 4.0					

Start of delivery blocking

	Supply pomp  pressure bar : 5.5  Tolerance bar + : 0.3
	+ Shutoff solenoid
FULL-LOAD SPEED REGULATION	Volt : 12
Rated speed rpm : 2200 Del. quantity	+ Rated speed rpm : 1000 + Supply pomp
cm3/1000 strokes : 23.0	pressure bar : 6.7
Tolerance	Tolerance bar +: 0.3
cm3/1000 str. +-: 1.0 Shutoff solenoid	+ Shutoff solenoid + Volt : 12
Volt : 12	+
	+ OVERFLOW QUANTITY
STARTING FUE' DELIVERY	Poted enough non a 500
Rated speed rpm : 100	+ Rated speed rpm : 500 + Overflow quantity
Del. quantity	+ ccm/10s : 119.4
cm3/1000 strokes : 45.0	Tolerance
Tolerance cm3/1000 str. + : 20.0	+ ccm/10s + : 22.2
Shutoff solenoid	Check tolerance
Volt : 12	+ ccm/10s +-: 22.2
	+ Shutoff solenoid
	+ Volt : 12
	Rated speed rpm : 1950
	+ Overflow quantity
INJECTION-PUMP TEST SPECIFICATIONS	+ ccm/10s : 150.0 + Tolerance
TIMING DEVICE CHARACTERISTIC	ccm/10s +: 34.7
Rated speed rpm : 2000	Check tolerance
·	+ ccm/10s +-: 34.7
SV travel mm : 5.5	+ Shutoff solenoid + Volt : 12
Tolerance mm +-: 0.4 Check	† Volt : 12
tolerance mm +-: 0.9	DELIVERY AND BREAKAWAY CHARACTERISTIC
Shutoff solenoid	†
Volt : 12	+ Rated speed rpm : 2200 + Del. quantity
Rated speed rpm : 1000	cm3/1000 strokes : 23.0
	Tolerance
SV travel mm : 1.7	cm3/1000 str. +: 1.0
Tolerance mm +-: 0.4 Check	+ Check tolerance + cm3/1000s. + : 5.0
tolerance mm +-: 0.9	Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	+
	Doted coord non - 24/0
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Rated speed rpm : 2140 + Del. quantity
SUPPLY PUMP PRESSURE CHARACTERISTIC	Rated speed rpm : 2140  Del. quantity  cm3/1000 strokes : 29.5
Rated speed rpm : 2000	Del. quantity cm3/1000 strokes : 29.5 Tolerance
Rated speed rpm : 2000 Supply pomp	Del. quantity cm3/1000 strokes : 29.5 Tolerance cm3/1000 str. +-: 3.0
Rated speed rpm : 2000 Supply pomp pressure bar : 8.9	Del. quantity cm3/1000 strokes : 29.5 Tolerance cm3/1000 str. +-: 3.0 Check tolerance
Rated speed rpm : 2000 Supply pomp	Del. quantity cm3/1000 strokes : 29.5 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 6.0 Shutoff solenoid
Rated speed rpm : 2000 Supply pomp pressure bar : 8.9 Tolerance bar +-: 0.3	Del. quantity cm3/1000 strokes : 29.5 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000s. +-: 6.0

Del. quantity		<b>1</b>			
cm3/1000 strokes	: 2.5	FULL LOAD CTOD CO	NITONI	1.5750	
	2.5	+ FULL-LOAD STOP CO	MIKUL	LEVER	
l'olerance		+			
cm3/1000 str. +-	: 2.5	Rated speed rpm		425	
		nated speed (pill	•	767	
Check tolerance		+ Del. quantity			
cm3/1000s. +-	: 2.5	+ cm3/1000 strokes	:	1.5	
Shutoff solenoid		+ Tolerance			
	. 42			4 =	
Volt	: 12	+ cm3/1000 str. +-	- :	1.5	
		+ Spread			
Aneroid pressure		+ cm3/1000 strokes	•	5.0	
				ا.0	
hPa	:	+ Check tolerance			
		+ cm3/1000s. +	- :	1.5	
LDA/		+ Spread			
	: 7.7	op/ cdd		F 6	
rida stroke mm	: 7. <i>i</i>	+ cm3/1000 strokes	:	5.0	
		+			
Rated speed rpm	: 1950	+ IDLE DELIVERY			
	. ,,,,,	TAPE ACETACUI			
De!. quantity		Ť			
cm3/1000 strokes	: 37.0	+ Rated speed rpm	:	500	
Tolerance		+ Del. quantity			
cm3/1000 str. +-	: 1.2			7.0	
	. 1.2	+ cm3/1000 strokes	•	3.0	
Check tolerance		+ Tolerance			
cm3/1000s. +	: 2.5	+ cm3/1000 str. +	- :	3.0	
Shutoff solenoid	- 40.00	Check tolerance		5.0	
	40				
Volt	: 12	+ sm3/1000s. +	- :	3.0	
		+ Shutoff solenoid			
Rated speed rpm	: 1700	+ Volt		12	
	. 1700	T VOLL	:	12	
Del. quantity		+			
cm3/1000 strokes	: 38.0	+			
Tolerance		1			
	: 1.2	T			
	• 7 7	<u> </u>			
cm3/1000 str. +		T .			
	. 1.2				
Check tolerance					
Check tolerance cm3/1000s. +-					
Check tolerance cm3/1000s. +- Shutoff solenoid	: 2.5	EXHAUST-GAS RECI	RCULAT	ION	
Check tolerance cm3/1000s. +- Shutoff solenoid	: 2.5	EXHAUST-GAS RECI	RCULAT	ION	
Check tolerance cm3/1000s. +-		+			
Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: 2.5 : 12	+ Rated speed rpm		ION 1250	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm	: 2.5	Rated speed rpm Del. quantity	•	1250	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm	: 2.5 : 12	Rated speed rpm Del. quantity	•	1250	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity	: 2.5 : 12 : 500	Rated speed rpm Del. quantity cm3/1000 strokes	•		
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes	: 2.5 : 12 : 500	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	•	1250 21.3	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 2.5 : 12 : 500 : 25.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +	•	1250	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 2.5 : 12 : 500 : 25.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +	•	1250 21.3	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 2.5 : 12 : 500 : 25.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance	:	1250 21.3 0.5	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 2.5 : 12 : 500 : 25.5 : 0.2	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +	:	1250 21.3	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 2.5 : 12 : 500 : 25.5 : 0.2	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid	:	1250 21.3 0.5 2.5	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +	:	1250 21.3 0.5	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid	:	1250 21.3 0.5 2.5	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 2.5 : 12 : 500 : 25.5 : 0.2	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt	:	1250 21.3 0.5 2.5	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid	:	1250 21.3 0.5 2.5	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION	:	1250 21.3 0.5 2.5	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION	:	1250 21.3 0.5 2.5 12	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm	:	1250 21.3 0.5 2.5	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity	: : : : : : : : : : : : : : : : : : : :	21.3 0.5 2.5 12	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	21.3 0.5 2.5 12	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	21.3 0.5 2.5 12	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	21.3 0.5 2.5 12 480 26.0	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL.  Rated speed rpm	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +	:	21.3 0.5 2.5 12	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL  Rated speed rpm Del. quantity	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid	:	1250 21.3 0.5 2.5 12 480 26.0 6.0	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL  Rated speed rpm Del. quantity	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +	:	1250 21.3 0.5 2.5 12 480 26.0 6.0	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid	:	21.3 0.5 2.5 12 480 26.0	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid	:	1250 21.3 0.5 2.5 12 480 26.0 6.0	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid	:	1250 21.3 0.5 2.5 12 480 26.0 6.0	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	1250 21.3 0.5 2.5 12 480 26.0 6.0	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5 : 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	1250 21.3 0.5 2.5 12 480 26.0 6.0	
Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5 : 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity		1250 21.3 0.5 2.5 12 480 26.0 6.0 12	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Spread	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5 : 1.5 : 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes		1250 21.3 0.5 2.5 12 480 26.0 6.0	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Spread	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5 : 1.5 : 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity		1250 21.3 0.5 2.5 12 480 26.0 6.0 12	
Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5 : 1.5 : 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance Tolerance Tolerance		1250 21.3 0.5 2.5 12 480 26.0 6.0 12 300 48.0	
Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000s. +- Check tolerance cm3/1000s. +- Spread	: 2.5 : 12 : 500 : 25.5 : 0.2 : 3.0 : 12 E STOP : 425 : 1.5 : 1.5 : 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes		1250 21.3 0.5 2.5 12 480 26.0 6.0 12 300 48.0	

Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 7.7
Dimension K mm : 2,8
Tolerance mm + : +0,1
Dimension KF mm : 8,4
Tolerance mm +-: +0,2

Dimension MS mm : 1,8 Tolerance mm + : +0,2

MICROSWITCH SET

: ARF 20,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 42,8..45,8

Control lever

position YB mm : 59,5..71,5

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.06.96 Test oil : ISO 4113

Part no. : 0 460 414 132 Fump designation : VE4/11F2000R663

Customer—spec. information
Customer : OTOSAN
Motor : 2.5L-DI
Power KW : 74.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 114

Opening pressure

bar : 207 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,62
Tolerance mm + : +-0,05
Outlet : B KDEP1151

# INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000

Setting mm : 3.2
Tolerance mm + : 0.3
Shutoff solenoid
Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 7.0
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 800
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 42.0
Tolerance
cm3/1000 str. +: 0.2
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 29.0 Tolerance cm3/1000 str. +-: 0.5 Spread cm3/1000 strokes : 3.0 Shutoff solenoid Volt 12 Check tolerance cm3/1000S. 4.0

### IDLE SETTING

Rated speed rpm : 425

Del. quantity	1
cm3/1000 strokes : 7.7	TIMING-DEVICE TRAVEL DIFFERENCE
Tolerance	T ITHING-DEATCE INVALE DIFFERENCE
cm3/1000 str. +-: 1.0	T Potted annual man 1500
Shutoff solenoid	Rated speed rpm : 1500
Volt : 12	Del. quantity
Spread	cm3/1000 strokes : -1.8
	Tolerance
cm3/1000 strokes : 3.0 Check tolerance	+ cm3/1000 str. +: 0.1
cm3/1000s. : 4.0	Shutoff solenoid
CIID/ 10003. : 4.0	+ Volt : 12
	THIS TON DIMO TEST OPERATIONS
	INJECTION—PUMP TEST SPECIFICATIONS
EULL TOAN SPEEN PECULATION	TIMING DELIZOR CHARACTERYOTTO
FULL-LOAD SPEED REGULATION	TIMING DEVICE CHARACTERISTIC
Rated speed rpm : 2200	Poted and an add and a 4500
	Rated speed rpm : 1500
	Aneroid pressure
Del. quantity cm3/1000 strokes : 17.8	hPa : 1000
cm3/1000 strokes : 17.8 Tolerance	CV traval as 4.7
cm3/1000 str. +-: 1.0	SV travel mm : 4.7
Shutoff solenoid	Tolerance mm +-: 0.4
Volt : 12	Check
vott : 12	tolerance mm +: 0.9
STARTING FUEL DELIVERY	Shutoff solenoid
STARTING FUEL DELIVERY	+ Volt : 12
Rated speed rpm : 100	Dated around are 1000
	Rated speed rpm : 1000
Del. quantity cm3/1000 strokes : 80.0	Aneroid pressure
Tolerance	hPa : 1000
cm3/1000 str. +-: 20.0	314 Americal and
Shutoff solenoid	SV travel mm : 1.9
	Tolerance mm + : 0.4
Volt : 12	Check
	tolerance mm +: 0.9
	Shutoff solenoid
1 OAD-DEDENDENT STADT OF DELTHERY	Volt : 12
LOAD-DEPENDENT START OF DELIVERY SETTING	T SUPPLY PUMP PRESSURE CHARACTERISTIC
25117149	SUPPLY PUMP PRESSURE CHARACTERISTIC
DELIVERY DIFFERENCE	Rated speed rpm : 2000
DELIVERY DIFFERENCE	+ Rated speed rpm : 2000 + Aneroid pressure
Rated speed rpm : 1500	+ hPa : 1000
Del. quantity	Supply pomp
cm3/1000 strokes : -5.6	pressure bar : 9.2
Tolerance	Tolerance bar + : 0.3
cm3/1000 str. +: 1.0	Shutoff solenoid
Shutoff solenoid	Volt : 12
Volt : 12	. 12
1 12	Rated speed rpm : 1000
PRESSURE DIFFERENCE	Aneroid pressure
- HEODONE DITTENENCE	hPa : 1000
Rated speed rpm : 1500	Supply pomp
Del. quantity	pressure bar : 6.5
cm3/1000 strokes : -0.2	Tolerance bar +-: 0.3
Tolerance	Shutoff solenoid
cm3/1000 str. + : 0.1	Volt : 12
Shutoff solenoid	. 12
Volt : 12	OVERFLOW QUANTITY
, 12	A ACUITOM MONIALTIL

Rated speed rpm	: 800	+ Check tolerance
Aneroid pressure hee	. 1000	+ cm3/1000s. +: 1.5
overflow quantity	: 1000	+ Shutoff solenoid + Volt : 12
ccm/10s	: 133.3	T vott : 12
Tolerance	. ,33.3	Rated speed rpm : 1000
ccm/10s +-	; 22.2	+ Aneroid pressure
		+ hPa : 450
Check tolerance	22.2	†
ccm/10s +- Shutoff solenoid	: 22.2	+ LDA/
Volt	: 12	+ HBA stroke mm : 5.3 + Del. quantity
VOCC	. 12	+ cm3/1000 strokes : 35.0
Rated speed rpm	: 1950	+ Tolerance
Aneroid pressure		+ cm3/1000 str. + : 0.5
hPa	: 1000	+ Check tolerance
Overflow quantity ccm/10s	. 450 7	+  cm3/1000s. + : 3.0
Tolerance	: 152.7	+ Shutoff solenoid + Volt : 12
ccm/10s +	: 41.6	I 4060 : 12
	• • • • • • • • • • • • • • • • • • • •	Rated speed rpm : 1950
Check tolerance		+ Aneroid pressure
ccm/10s +-	: 41.6	† hPa : 1000
Shutoff solenoid	. 42	+ Del. quantity
Volt	: 12	+ cm3/1000 strokes : 42.0 + Tolerance
DELITYERY AND EREAK	AWAY CHARACTERISTIC	+ cm3/1000 str. +-: 1.2
DEEL VERTI FAID DITERY	AWAT CHARACTERIOTIC	Check tolerance
Rated speed rpm	: 2200	+ cm3/1000s. +-: 2.5
Anercid pressure		+ Shutoff solenoid
	: 1000	+ Volt : 12
Del. quantity cm3/1000 strokes	: 17.8	Poted aread mm . 1750
Tolerance	17.0	+ Rated speed rpm : 1750 + Aneroid pressure
cm3/1000 str. +	: 1.0	hPa : 1000
Check tolerance		+ Del. quantity
cm3/1000s. +-	: 5.0	+ cm3/1000 strokes : 42.0
Shutoff solenoid	. 43	+ Tolerance
Volt	: 12	+ cm3/1000 str. +-: 1.2 + Check tolerance
Rated speed rpm	: 2150	+ cm3/1000s. +-: 2.5
Aneroid pressure	. 2130	+ Shutoff solenoid
hPa	: 1000	+ Volt : 12
Del. quantity		+
cm3/1000 strokes	: 24.5	Rated speed rpm : 800
Tolerance cm3/1000 str. +-	: 3.0	+ Aneroid pressure + hPa : 1000
Check tolerance	. 5.0	Del. quantity
cm3/1000s. +-	: 6.0	+ cm3/1000 strokes : 42.0
Shutoff solenoid		Tolerance
Volt	: 12	+  cm3/1000  str. + : 0.2
Data damas damas	. 2750	+ Check tolerance
Rated speed rpm Aneroid pressure	: 2350	+ cm3/1000s. +-: 3.0 + Shutoff solenoid
hPa	: 1000	+ Volt : 12
Del. quantity		+
cm3/1000 strokes	: 1.5	+
Tolerance	. 4.5	FLEATO
cm3/1000 str. +-	: 1.5	+ ELECTR. SHUTOFF
		+ CONTROL LEVER, IDLE STOP

	+ Del. quantity
Rated speed rpm : 500	cm3/1000 strokes : 5.0
Del. quantity cm3/1000 strokes : 1.5	+ Tolerance + cm3/1000 str. +-: 3.0
Tolerance cm3/1000 str. +-: 1.5	Check tolerance cm3/1000s. +: 3.0
Check tolerance cm3/1000s. +-: 1.5	Shutoff solenoid Volt : 12
Spread cm3/1000 strokes : 5.0	PRESSURE DIFFERENCE
FULL-LOAD STOP CONTROL LEVER	Rated speed rpm : 1500
Rated speed rpm : 500 Del. quantity	- Supply pomp - pressure bar : -1.5 - Tolerance bar +-: 0.3
cm3/1000 strokes : 1.5	- Shutoff solenoid
cm3/1000 str. + : 1.5	Volt : 12
Spread cm3/1000 strokes : 5.0	TIMING-DEVICE TRAVEL DIFFERENCE
Check tolerance cm3/1000S. + : 1.5 Spread	+ Rated speed rpm : 1500 + Tolerance mm +- : 0.6 + Check
cm3/1000 strokes : 5.0	tolerance mm +-: 0.6 Shutoff solenoid
	Volt : 12
	START TRANSITION
Taranta (Taranta danta) dalah dalah dalah dantara dantara dalah masambalah balah dalah dalah masambalah dala	+
CHECKING LOAD-DEPENDENT START OF DELIVERY	Rated speed rpm : 480 Del. quantity
DELIVERY DIFFERENCE	cm3/1000 strokes : 30.0 Tolerance
Rated speed rpm : 1500	t cm3/1000 str. + : 10.0 Shutoff solenoid
Del. quantity cm3/1000 strokes : -8.0	+ Volt : 12
Tolerance cm3/1000 str. +-: 3.0	Rated speed rpm : 300
Check tolerance cm3/1000s. +-: 5.0	Del. quantity cm3/1000 strokes : 63.0
Shutoff solenoid - 12 -	Tolerance : 15.0
TIMING-DEVICE TRAVEL DIFFERENCE	Shutoff solenoid Volt : 12
Rated speed rpm : 1500 Del. quantity	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes : -1.8	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 str. + : 0.1 - Check tolerance	LDA/ HBA stroke mm : 5.3
cm3/1000s. + : 0.1 - Shutoff solenoid	Dimension K mm : 2,8
Volt : 12	Tolerance mm + : +0,1 Dimension KF mm : 8,4 Tolerance mm + +0,2
DELIVERY DIFFERENCE	Tolerance mm + : + 0,2  MS1 dimension mm : 1,8
Rated speed rpm : 1500	Tolerance mm + : +0,15/0,1 KSB travel mm : 10,0

TLA travel mm : 2,5

CONTROL LEVER POSITION SET

Control lever

position YA mm : 42,8..45,8

Control Lever

position YB mm : 59,5..71,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microsard(s) W400/...

Edition : 24,02,94 Test oil : ISO 4113

Part no. : 0 460 484 061 Pump designation: VE4/8F2300R317-6

Customer-spec. information Customer : RENAULT : F8Q - 706 CA Motor 47.0 Power KW

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar +-: 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm 450 :

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm: : 1250

Setting mm 3.4 Tolerance mm 0.2 Shutoff solenoid 12 Volt

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250 Supply pomp

pressure bar

4.7 Tolerance bar +-: 0.3 Shutoff solenoid

Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 31.5 Tolerance cm3/1000 str. +-: 0.5 Spread cm3/1000 strokes : 2.5 Shutoff solenoid

Volt 12

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : Del. quantity cm3/1000 strokes : 3.0 Tolerance cm3/1000 str. +-:2.0 Shutoff solenoid Volt 12

#### IDLE DELIVERY

Rated speed rpm : 410 Del. quantity cm3/1000 strokes : 11.0 Tolerance cm3/1000 str. + :2.0 cm3/1000 strokes : 2.5 Shutoff solenoid Volt 12

## HIGH IDLE SETTING

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 9.0

Tolerance	†
cm3/1000 str. +-: 2.0	+
Shutoff salenaid	+ INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	+
	+ TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	+
	+ Rated speed rpm : 2000
Rated speed rpm : 2450	+
Del. quantity	+ SV travel mm : 6.2
cm3/1000 strokes : 26.0	+ Tolerance mm +-: 0.4
Tolerance	+ Check
cm3/1000 str. +-: 3.0	+ tolerance mm + : 0.7
Shutoff solenoid	+ Shutoff solenoid
Valt : 12	+ Volt : 12
	1.
STARTING FUEL DELIVERY	+ Rated speed rpm : 750
	+
Rated speed rpm : 100	+ SV travel mm : 1.5
Del. quantity	+ Tolerance mm + : 0.4
cm3/1000 strokes : 55.0	+ Check
Tolerance	tolerance mm + : 0.7
cm3/1000 str. +-: 15.0	+ Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	+
	Rated speed rpm : 310
	+
	SV travel mm : 2.2
LOAD-DEPENDENT START OF DELIVERY	Tolerance mm +-: 1.2
SETTING	Check
	tolerance mm +-: 1.2
DELIVERY DIFFERENCE	Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 1250	+
Del. quantity	KSB/AFB Volt : 12
cm3/1000 strokes : -11.5	+
Tolerance	Rated speed rpm : 500
cm3/1000 str. + : 1.0	<del>}</del>
Shutoff solenoid	SV travel mm : 3.4
Volt : 12	Tolerance mm +: 1.2
	+ Check
PRESSURE DIFFERENCE	tolerance mm + : 1.2
	Shutoff solenoid
Rated speed rpm : 1250	+ Volt : 12
Del. quantity	+
cm3/1000 strokes : -0.2	KSB/AFB Volt : 12
Tolerance	+
cm3/1000 str. +-: 0.1	SUPPLY PUMP PRESSURE CHARACTERISTIC
Shutoff solenoid	+
Volt : 12	Rated speed rpm : 2000
	Supply pomp
TIMING-DEVICE TRAVEL DIFFERENCE	pressure bar : 6.6
	Tolerance bar +-: 0.3
Rated speed rpm : 1250	- Shutoff solenoid
Del. quantity	+ Volt : 12
cm3/1000 strokes : -0.5	+
Tolerance	Rated speed rpm : 750
cm3/1000 str. +-: 0.1	- Supply pomp
Shutoff solenoid	pressure bar : 3.4
Volt : 12	Tolerance bar +-: 0.3
	+
	•

Shutoff solenoid	1.	Tolerance	
Volt : 12	Ŧ	cm3/1000 str. +-: Check tolerance	1.0
OVERFLOW QUANTITY	Î	cm3/1000s. +-: Shutoff solenoid	2.3
Rated speed rpm : 2250 Overflow quantity	Ŧ	Volt :	12
ccm/10s : 97.2 Tolerance	Ŧ	Rated speed rpm : Del. quantity	1625
ccm/10s +: 41.6	<u> </u>	cm3/1000 strokes : Tolerance	31.2
Check tolerance ccm/10s +-: 41.6	‡	cm3/1000 str. +-: Check tolerance	1.5
Shutoff solenoid Volt : 12	‡	cm3/1000s. ←: Shutoff solenoid	2.3
Rated speed rpm : 750	‡	Volt :	12
Overflow quantity ccm/10s : 63.8	‡	Rated speed rpm : Del. quantity	
Tolerance ccm/10s +-: 22.2	‡	cm3/1000 strokes : Tolerance	31.3
Check tolerance	‡	cm3/1000 str. + : Check tolerance	1.0
ccm/10s +-: 22.2 Shutoff solenoid Volt : 12	‡	cm3/1000s. +: Shutoff solenoid Volt :	2.3
	EDISTIC		12
DELIVERY AND BREAKAWAY CHARACT Rated speed rpm : 2450	ERISTIC	Rated speed rpm : Del. quantity cm3/1000 strokes :	750 31.6
Del. quantity cm3/1000 strokes : 26.0	Ŧ	Tolerance cm3/1000 str. + :	1.5
Tolerance cm3/1000 str. + : 3.0	Ŧ	Check tolerance cm3/1000s. +-:	2.3
Check tolerance cm3/1000s : 4.0	‡	Shutoff solenoid Volt :	12
Shutoff solenoid Volt : 12	‡	Rated speed rpm :	
Rated speed rpm : 2650	‡	Del. quantity cm3/1000 strokes :	31.5
Del. quantity cm3/1000 strokes : 11.0	‡	Tolerance cm3/1000 str. $\leftarrow$ :	0.5
Check tolerance cm3/1000s. +: 5.0	+	Check tolerance cm3/1000s. +-:	2.3
Shutoff solenoid Volt : 12	Ŧ	Shutoff solenoid Volt :	12
Rated speed rpm : 2950 Del. quantity	Ŧ		
cm3/1000 strokes : 2.5 Tolerance	<u> </u>	ELECTR. SHUTOFF CONTROL LEVER, IDLE	STOP
cm3/1000 str. +-: 2.5 Check tolerance	‡	Rated speed rpm :	410
cm3/1000s. + : 2.5 Shutoff solenoid	‡	Del. quantity cm3/1000 strokes :	1.5
Volt : 12	‡	Tolerance cm3/1000 str. +-:	1.5
Rated speed rpm : 2250 Del. quantity	‡	Check tolerance cm3/1000s. +-:	1.5
cm3/1000 strokes : 32.5	†		

Spread -	+ Rated speed rpm : 310
cm3/1000 strokes : 5.0 -	Del. quantity
•	cm:3/1000 strokes : 30.0
-	Tolerance
-	cm3/1000 str. +: 15.0
•	Shutoff solenoid Volt : 12
	+ Volt : 12
CHECKING LOAD-DEPENDENT	Rated speed rpm : 210
START OF DELIVERY	Del. quantity
NEL THERY ATECEDIALE	cm3/1000 strokes : 60.0
DELIVERY DIFFERENCE -	Tolerance   cm3/1000 str. ← : 15.0
Rated speed rpm : 1250	Shutoff solenoid
Del. quantity -	Volt : 12
cm3/1000 strokes : -15.2	
Tolerance	
cm3/1000 str. +-: 2.0 Check tolerance	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000s. +-: 2.0	Dimension K mm : 3,3
Shutoff solenoid -	Tolerance mm +-: +-0,1
Volt : 12 -	Dimension KF mm : 5,5
	Tolerance mm :-: +0,2
TIMING-DEVICE TRAVEL DIFFERENCE	Dimension MS mm : 1,3
Rated speed rpm : 1250	Tolerance mm + : +-0,2
Del. quantity	
cm3/1 <b>000</b> strokes : -0.5	MICROSWITCH
Tolerance -	SET
cm3/1000 str. +-: 0.1	0.0.7.0
Check tolerance $-$ cm3/1000s. $\leftarrow$ : 0.1	mm : 0,83,0 : 7,58,5
Shutoff solenoid	. 7,30,3
Volt : 12	CONTROL LEVER POSITION
-	SET
DELIVERY DIFFERENCE	
Rated speed rpm : 1250	Control lever
Pel. quantity	position YA mm : 32,636,6
cm3/1000 strokes : 5.0	,
Tolerance	Control Lever
cm3/1000 str. +-: 3.0 Check tolerance	position YB mm : 65,778,3
cm3/1000s. + : 3.0	
Shutoff solenoid -	
Volt : 12	
	End of test-specification sheet
TIMING-DEVICE TRAVEL DIFFERENCE	<u> </u>
Rated speed rpm : 1250	
Tolerance mm + : 0.2	
Check -	+
tolerance mm +: 0.3	<del> </del>
Shutoff solenoid - Volt : 12 -	
VULL : 12	

START TRANSITION

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.07.96 : ISO 4113 Test oil

: 0 460 484 129 Part no. Pump designation : VE4/8F2300R317-9

Customer-spec, information Customer : RENAULT Motor : F8C - 706 CA Power KW 45.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance \*C + :

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + :

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

bar 130 Tolerance bar + :

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm 450 :

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

1250 Rated speed rpm :

Setting mm 3.4 : Tolerance mm 0.2 Shutoff solenoid 12 Volt

#### SUPPLY PUMP PRESSURE

Rated speed rpm 1250

Supply pomp

pressure bar 4.7 Tolerance bar +-: 0.3 Shutoff solenoid

Valt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 31.5 Tolerance cm3/1000 str. +-:0.5

Spread cm3/1000 strokes : 2.5

Shutoff solenoid 12 Volt

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 550 Del. quantity

cm3/1000 strokes : 3.0

Tolerance

cm3/1000 str. + :Shutoff solenoid

Volt 12

## IDLE DELIVERY

Rated speed rpm :

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 str. +-: 2.0 Spread

cm3/1000 strokes : 2.5 Shutoff solenoid Volt 12

## HIGH IDLE SETTING

Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 9.0

Tolerance +	
cm3/1000 str. +-: 2.0	
Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	200000000000000000000000000000000000000
<del>-</del>	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	
Reted speed rom : 2450	Rated speed rpm : 2000
Reted speed rpm : 2450 + Del. quantity	SV travel mm : 6.2
cm3/1000 strokes : 26.0	Tolerance mm +-: 0.4
Tolerance	Check
cm3/1000 str. +-: 3.0	tolerance mm +-: 0.7
Shutoff solenoid +	Shutoff solenoid
Volt : 12 +	Volt : 12
CTARTING FUEL ARITURNA	5
STARTING FUEL DELIVERY	Rated speed rpm : 750
Rated speed rpm : 100	SV travel mm : 1.5
Del. quantity	Tolerance mm + : 0.4
cm3/1000 strokes : 55.0	Check
Tolerance	tolerance mm +-: 0.7
cm3/1000 str. +: 15.0 +	Shutoff solenoid
Shutoff solenoid +	Volt : 12
Volt : 12	Data dans adam 240
Ī	Rated speed rpm : 310
1	SV travel mm : 2.2
LOAD-DEPENDENT START OF DELIVERY	Tolerance mm +-: 1.2
SETTING	Check
+	tolerance mm + : 1.2
DELIVERY DIFFERENCE	Shutoff solenoid
Rated speed rpm : 1250	Volt : 12
Rated speed rpm : 1250 + Del. quantity +	KSB/AFB Volt : 12
cn3/1000 strokes : -11.5	KSB/AFB VOLL : 12
Tolerance	Rated speed rpm : 500
cm3/1000 str. +: 1.0	The second secon
Shutoff solenoid +	SV travel mm : 3.4
Volt : 12	Tolerance mm + : 1.2
†	Check
PRESSURE DIFFERENCE	tolerance mm +: 1.2
Rated speed rpm : 1250	Shutoff solenoid
Rated speed rpm : 1250	Volt : 12
cm3/1000 strokes : -0.2	KSB/AFB Volt : 12
Tolerance	
cm3/1000 str. +-: 0.1	SUPPLY PUMP PRESSURE CHARACTERISTIC
Shutoff solenoid +	
Volt : 12	Rated speed rpm : 2000
TIMING DEUTCE TOAUGI DIFFERENCE	Supply pomp
TIMING-DEVICE TRAVEL DIFFERENCE	pressure bar : 6.6 Tolerance bar + : 0.3
Rated speed rpm : 1250	Tolerance bar +-: 0.3 \ Shutoff solenoid
Del. quantity	Volt : 12
cm3/1000 strokes : -0.5	
Tolerance	Rated speed rpm : 750
cm3/1000 str. +-: 0.1	Supply pomp
Shutoff solenoid +	pressure bar : 3.4
Volt : 12	Tolerance bar + : 0.3

of the second			
Shutoff solenoid Volt :	12	+ Tolerance	
voct :	12	+ cm3/1000 str. +-: 1.0 + Check tolerance	
OVERFLOW QUANTITY		- cm3/1000s. +-: 2.3	
TEM COMMITTE		+ Shutoff solenoid	
Rated speed rpm :	2250	+ Volt : 12	
Overflow quantity		+	
ccm/10s :	97.2	+ Rated speed rpm : 1525	
Tolerance		+ Del. quantity	
ccm/10s +-:	41.6	+ cm3/1000 strokes : 31.2	
Charle halamana		+ Tolerance	
Check tolerance ccm/10s +-:	11 6	cm3/1000 str. +: 1.5	
Shutoff solenoid	41.6	+ Check tolerance + cm3/1600s. +-: 2.3	
Volt :	12	Shutoff solenoid	
	10	+ Volt : 12	
Rated speed rpm :	750		
Overflow quantity		Rated speed rpm : 2000	
ccm/10s :	63.8	+ Del. quantity	
Tolerance		+ cm3/1000 strokes : 31.3	
ccm/10s <del>←</del> :	22.2	+ Tolerance	
		+ cm3/1000 str. +: 1.0	
Check tolerance	22.2	+ Check tolerance	
ccm/10s +-: Shutoff solenoid	22.2	+ cm3/1000s. + : 2.3 + Shutoff solenoid	
Volt :	12	+ Volt : 12	
	,,	1 12	
DELIVERY AND BREAKAWA	Y CHARACTERISTIC	Rated speed rpm : 750	
		Del. quantity	
Rated speed rpm :	2450	+ cm3/1000 strokes : 31.6	
Del. quantity		+ Tolerance	
cm3/1000 strokes :	26.0	+ cm3/1000 str. +-: 1.5	
Tolerance		+ Check tolerance	
cm3/1000 str. +-:	3.0	+ cm3/1000s. +: 2.3	
Check tolerance cm3/1000s. +-:	4.0	+ Shutoff solenoid	
Shutoff solenoid	4.0	† Volt : 12	
Volt :	12	Rated speed rpm : 1250	
	, .	Del. quantity	
Rated speed rpm :	2650	- cm3/1000 strokes : 31.5	
Del. quantity		Tolerance	
cm3/1000 strokes :	11.0	+ cm3/1000 str. +: 0.5	
Check tolerance		+ Check tolerance	
cm3/1000s. +-:	5.0	+ cm3/1000s. +-: 2.3	
Shutoff solenoid	12	+ Shutoff solenoid	
Volt :	12	+ Volt : 12	
Rated speed rpm :	2950	I	
Del. quantity	L/30		
cm3/1000 strokes :	2.5	ELECTR. SHUTOFF	
Tolerance		CONTROL LEVER, IDLE STOP	
cm3/1000 str. $+-$ :	2.5	+	
Check tolerance		Rated speed rpm : 410	
cm3/1000s. +-:	2.5	+ Del. quantity	
Shutoff solenoid	12	+ cm3/1000 strokes : 1.5	
Volt :	12	Tolerance	
Rated speed rpm :	2250	+ cm3/1000 str. +-: 1.5 - Check tolerance	
Del. quantity	EEJU	+ cm3/1000s. +-: 1.5	
cm3/1000 strokes :	<b>3</b> 2.5	1.3	
	<del></del>	· ·	

Spread

cm<sup>2</sup>/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT START OF DELIVERY

#### DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -15.2
Tolerance
cm3/1000 str. +: 2.0
Check tolerance
cm3/1000s. +: 2.0
Shutoff solenoid
Volt : 12

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/10C0 strokes : -C.5
Tolerance
cm3/1000 str. +-: 0.1
Check tolerance
cm3/1000s. +-: 0.1
Shutoff solenoid
Volt : 12

## DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 str. +: 3.0
Check tolerance
cm3/1000s. +: 3.0
Shutoff solenoid
Volt : 12

## TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250

SV travel mm : -0.5
Tolerance mm +: 0.2
Check
tolerance mm +: 0.3
Shutoff solenoid
Volt : 12

## START TRANSITION

Rated speed rpm : 310
Del. quantity
cm3/1000 strokes : 30.0
Tolerance
cm3/1000 str. +-: 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 str. +-: 15.0
Shutoff solenoid
Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +-0,1
Dimension KF mm : 5,5
Tolerance mm + : +-0,2
Dimension MS mm : 1,3
Tolerance mm + : +-0,2

## **MICROSWITCH**

SET

fivm : 0,8...3,0 : 7,5..8,5

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W40G/...

Edition : 29.03.94 : ISO 4113 Test oil

: C 460 484 059 Part no. Pump designation : VE4/8F2300R458-2

Customer-spec. information Customer : RENAULT Motor : F8Q - 706 Power KW 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance \*C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

bar 130 Tolerance bar +-: 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.4 Tolerance mm ←: 0.2 Shutoff solenoid Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Supply pemp

pressure bar 4.7 Tolerance bar +-: 0.3

Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 32.1

Tolerance

cin 3/1000 str. +-:0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm: : 550

Del. quantity cm3/1000 strokes :

Tolerance

cm3/1000 str. + :2.0

Shutoff soleroid

Volt 12

IDLE DELIVERY

Rated speed rpm : 410

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 str. + :2.0

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt 12

HIGH IDLE SETTING

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 9.0

Tolerance +	
cm3/1000 str. +: 2.0 +	
Shutoff solenoid +	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12 +	
+	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION +	
.]	Rated speed rpm : 2000
Rated speed rpm : 2450	·
Del. quantity	SV travel mm : 6.2
cm3/1000 strokes : 28.5	Tolerance mm +-: 0.4
Tolerance	Check
cm3/1000 str. + : 3.0	tolerance mm +-: 0.7
Shutoff solenoid +	Shutoff solenoid
Volt : 12	Volt : 12
+	
STARTING FUEL DELIVERY	Rated speed rpm : 750
<del> </del>	The state of the s
Rated speed rpm : 100	SV travel ma : 1.5
Del. quantity	Tolerance mm +-: 0.4
cm3/1000 strokes : 55.0	Check
Tolerance	tolerance mm +-: 0.7
cm3/1000 str. + : 15.0	Shutoff solenoid
Shutoff solenoid +	Volt : 12
Volt : 12 +	
1	Rated speed rpm : 310
+	
+	SV travel mm : 2.2
LOAD-DEPENDENT START OF DELIVERY	Tolerance mm + : 1.2
SETTING	Check
+	tolerance mm + : 1.2
DELIVERY DIFFERENCE	Shutoff solenoid
1	Volt : 12
Rated speed rpm : 1250	
Del. quantity	KSB/AFB Volt : 12
cm3/1000 strokes : -11.5	
Tolerance +	Rated speed rpm : 500
cm3/1000 str. +: 1.0	• • • • • • • • • • • • • • • • • • • •
Shutoff solenoid +	SV travel mm : 3.4
Volt : 12	Tolerance mm + : 1.2
+	Check
PRESSURE DIFFERENCE +	tolerance mm +: 1.2
+	Shutoff solenoid
Rated speed rpm : 1250	Volt : 12
Del. quantity +	
cm3/1000 strokes : -0.2	KSB/AFB Volt : 12
Tolerance +	
cm3/1000 str. + : 0.1	SUPPLY PUMP PRESSURE CHARACTERISTIC
Shutoff solenoid +	
Volt : 12 +	Rated speed rpm : 2000
+	Supply pomp
TIMING-DEVICE TRAVEL DIFFERENCE +	pressure bar : 6.6
+	Tolerance bar + : 0.3
Rated speed rpm : 1250	Shutoff solenoid
Del. quantity	Volt : 12
cm3/1000 strokes : -0.5	
Tolerance	Rated speed rpm : 750
cm3/1000 str. +-: 0.1 +	Supply pomp
Shutoff solenoid +	pressure bar : 3.4
Volt : 12 +	Tolerance bar +-: 0.3
+	

Shutoff solenoid	I Tolomonos
Volt : 12	+ Tolerance + cm3/1000 str. +-: 1.0
1000	Check tolerance
OVERFLOW QUANTITY	+ cm3/1000s. +-: 2.3
	+ Shutoff solenoid
Rated speed rpm : 2250	† Volt : 12
Overflow quantity	†
ccm/10s : 97.2	+ Rated speed rpm : 1625
Tolerance ccm/10s +-: 41.6	Del. quantity
cciii/ 105 += : 41.6	+ cm3/1000 strokes : 31.6 + Tolerance
Check tolerance	cm3/1000 str. +: 1.5
ccm/10s +-: 41.6	+ Check tolerance
Shutoff solenoid	+ cm3/1000s. $+$ : 2.3
Volt : 12	+ Shutoff solenoid
5	† Volt : 12
Rated speed rpm : 750	Data dama adama adama
Overflow quantity ccm/10s : 63.8	+ Rated speed rpm : 2000 + Del. quantity
Tolerance . 05.0	cm3/1000 strokes : 33.5
ccm/10s +-: 22.2	+ Tolerance
	+  cm3/1000  str. + : 1.0
Check tolerance	+ Check tolerance
ccm/70s +: 22.2	+  cm3/1000S. +-: 2.3
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
DELIVERY AND BREAKAWAY CHARACTERIST	C Rated speed rpm : 750
ACTUALITY AND DISCUSSION OF STREET	Del. quantity
Rated speed rpm : 2450	+ cm3/1000 strokes : 31.7
Del. quantity	+ Tolerance
cm3/1000 strokes : 28.5	+ cm3/1000 str. $+$ : 1.5
Tolerance	Check tolerance
cm3/1000 str. +-: 3.0 Check tolerance	+ cm3/1000s. +-: 2.3
cm3/1000s. +-: 4.0	+ Shutoff solenoid + Volt : 12
Shutoff solenoid	† Volt : 12
Volt : 12	Rated speed rpm : 1250
	Del. quantity
Rated speed rpm : 2650	+ cm3/1000 strokes : 32.7
Del. quantity	+ Tolerance
cm3/1000 strokes : 14.5	+ cm3/1000 str. +-: 0.5
Check tolerance cm3/1000s. +-: 5.0	+ Check tolerance + cm3/1000s. +-: 2.3
Shutoff solenoid	Shutoff solenoid
Volt : 12	+ Volt : 12
	+
Rated speed rpm : 2950	+
Del. quantity	
cm3/1000 strokes : 2.5	ELECTR. SHUTOFF
Tolerance cm3/1000 str. +-: 2.5	CONTROL LEVER, IDLE STOP
Check tolerance	Rated speed rpm : 410
cm3/1000s. +: 2.5	Del. quantity
Shutoff solenoid	- cm3/1000 strokes : 1.5
Volt : 12	† Tolerance
	+ cm3/1000 str. +-: 1.5
Rated speed rpm : 2250	+ Check tolerance
Del. quantity cm3/1000 strokes : 34.0	+ cm3/1000s. +-: 1.5
UIID/ 1000 3C1 ONES . 34.0	Т

Spread cm3/1000 strokes	: 5.0
CHECKING LOAD-DEP START OF DELIVERY	
DELIVERY DIFFEREN	VCE
Rated speed rpm	: 1250
Del. quantity cm3/1000 strokes	: -15.2
Tolerance cm3/1000 str. +-	-: 2.0
Check tolerance cm3/1000s. +-	-: 2.0
Shutoff solenoid Volt	: 12
TIMING-DEVICE TRA	NVEL DIFFERENCE
Rated speed rpm	: 1250
Del. quantity cm3/1000 strokes	: -0.5
Tolerance cm3/1000 str. +-	-: 0.1
Check tolerance cm3/1000s. +-	-: 0.1
Shutoff solenoid Volt	: 12
DELIVERY DIFFEREN	ICE
Rated speed rpm Del. quantity	: 1250
cm3/1000 strokes Tolerance	: 5.0
cm3/1000 str. +- Check tolerance	-: 3.0
cm3/1000S. +- Shutoff solenoid	3.0
Volt	: 12
TIMING-DEVICE TRA	VEL DIFFERENCE
Rated speed rpm	: 1250

# START TRANSITION Rated speed rpm : 310 Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt 12 Rated speed rpm : 210 Del. quantity cm3/1000 strokes : 55.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt 12 ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : 3,3 Tolerance mm + : + 0.1Dimension KF mm : 5,5 Tolerance mm + : +-0,2 Dimension MS mm : 1,3 Tolerance mm +-:+-0.2**MICROSWITCH** SET : 0,8..3,0 : 9,8..10,8 CONTROL LEVER POSITION SET Control lever

End of test-specification sheet

position YA mm : 25,3..29,7

position YB mm : 62,6..74,4

Control lever

Check

Volt

SV travel mm

Shutoff solenoid

tolerance mm +-:

Tolerance mm

-0.5

0.2

0.3

12

Refer to Service l adjustment instruc See microcard(s) N	ctions.
Edition Test oil	: 02.07.96 : ISO 4113
Part no. Pump designation	: 0 460 484 130 : VE4/8F2300R458-5
Customer-spec. int Customer	: RENAULT
Motor Power KW	: F8Q - 706 : 45.0
TEST BENCH REQUIRE	EMENTS
Calibrating—oil return	
temperature °C Tolerance °C +-	: 45 : 1
Overflow restriction mm	: 0.55
Inlet press. bar Tolerance bar +-	: 0.35 : 0.05
Test nozzle holde assembly	: 1 688 901 022
Opening pressure bar Tolerance bar +-	: 130 : 3
Test lines	: 1 680 750 073
Outside diameter	: 6.00
x inside diameter x length mm	: 2.00 : 450

TIMING DEVICE TRA	VEL		
Rated speed rpm	:	1250	
Setting mm Tolerance mm +- Shutoff solencid Volt	•	3.4 0.2	
SUPPLY PUMP PRESS			
Rated speed rpm	:	1250	
Supply pomp pressure bar Tolerance bar +- Shutoff solenoid	:	4.7 0.3	
Volt	:	12	
FULL-LOAD DELIV.	WITH	OUT BOOST	PRESSURE
Rated speed rpm Del. quantity	:	1250	
cm3/1000 strokes Tolerance	:	32.1	
cm3/1000 str. +-	:	0.5	
cm3/1000 strokes Shutoff solenoid	:	2.5	
Volt	:	12	
HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING			
Rated speed rpm Del. quantity	:	550	
cm3/1000 strokes Tolerance	:	3.0	
cm3/1000 str. +- Shutoff solenoid	:	2.0	
Volt	:	12	
IDLE DELIVERY			
Rated speed rpm Del. quantity	:	410	
cm3/1000 strokes Tolerance	:	11.0	
cm3/1000 str. +-	:	2.0	
cm3/1000 strokes Shutoff solenoid	:	2.5	
Volt	:	12	
HIGH IDLE SETTING			

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 9.0

INJECTION PUMP SETTING VALUES

Tolerance	†
cm3/1000 str. +-: 2.0 Shutoff solenoid	- INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	+ TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Rated speed rpm : 2000
Rated speed rpm : 2450	+
Del. quantity cm3/1000 strokes ; 28.5	+ SV travel mm : 6.2 + Tolerance mm +-: 0.4
Tolerance cm3/1000 str. +-: 3.0	+ Check + tolerance mm + : 0.7
Shutoff solenoid Volt : 12	+ Shutoff solenoid + Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 750
	+
Rated speed rpm : 100 Del. quantity	+ SV travel mm : 1.5 + Tolerance mm + : 0.4
cm3/1000 strokes : 55.0 Tolerance	+ Check + tolerance mm +-: 0.7
cm3/1000 str. + : 15.0 Shutoff soleroid	+ Shutoff solenoid + Volt : 12
Volt : 12	+
	Rated speed rpm : 310
LOAD-DEPENDENT START OF DELIVERY SETTING	+ SV travel mm : 2.2 + Tolerance mm +-: 1.2 + Check
DELIVERY DIFFERENCE	tolerance mm +: 1.2 Shutoff solenoid
	Volt : 12
Rated speed rpm : 1250 Del. quantity	+ + KSB/AFB Volt : 12
cm3/1000 strokes : -11.5 Tolerance	+ Rated speed rpm : 500
cm3/1000 str. + : 1.0 Shutoff solenoid	SV travel mm : 3.4
Volt : 12	+ Tolerance mm +-: 1.2
PRESSURE DIFFERENCE	+ Check + tolerance mm + : 1.2 + Shutoff solenoid
Rated speed rpm : 1250 Del. quantity	Volt : 12
cm3/1000 strokes : -0.2 Tolerance	KSB/AFB Volt : 12
cm3/1000 str. +-: 0.1 Shutoff solenoid	SUPPLY PUMP PRESSURE CHARACTERISTIC
Volt : 12	Rated speed rpm : 2000
TIMING-DEVICE TRAVEL DIFFERENCE	+ Supply pomp + pressure bar : 6.6
Rated speed rpm : 1250	Tolerance bar + : 0.3 Shutoff solenoid
Del. quantity cm3/1000 strokes : -0.5	† Volt : 12
Tolerance cm3/1000 str. +-: 0.1	Rated speed rpm : 750 Supply pomp
Shutoff solenoid Volt : 12	pressure bar : 3.4 Tolerance bar + : 0.3
, 16	+ Occidence par

Shutoff solenoid		+ Tolerance
Volt	: 12	+ cm3/1000 str. +-: 1.0
		+ Check tolerance
OVERFLOW QUANTITY		+ cm3/1000s. $+-$ : 2.3
		+ Shutoff solenoid
Rated speed rpm		† Volt : 12
Overflow quantity		+
ccm/10s	: 97.2	Rated speed rpm : 1625
Tolerance	. /1 /	Del. quantity
ccm/10s +	: 41.6	+ cm3/1000 strokes : 31.6
Check tolerence		+ Tolerance + cm3/1000 str. +-: 1.5
ccm/10s +	: 41.6	Check tolerance
Shutoff solenoid	. 41.0	cm3/1000s. +-: 2.3
Volt	: 12	Shutoff solenoid
, , , ,		+ Volt : 12
Rated speed rpm	: 750	+
Overflow quantity		Rated speed rpm : 2000
ccm/10s	: 63.8	+ Del. quantity
Tolerance		+ cm3/1000 strokes : 33.5
ccm/10s +-	: 22.2	+ Tolerance
et i i		+ cm3/1000 str. + : 1.0
Check tolerance	. 22.2	+ Check tolerance
ccm/10s +- Shutoff solenoid	: 22.2	+ cm3/1000s. + : 2.3
Volt	: 12	+ Shutoff solenoid + Volt : 12
VOCE	. 12	† Volt : 12
DELIVERY AND BREAK	CAWAY CHARACTERISTIC	Rated speed rpm : 750
		- Del. quantity
Rated speed rpm	: 2450	+ cm3/1000 strokes : 31.7
Del. quantity		+ Tolerance
cm3/1000 strokes	: 28.5	+ cm3/1000 str. $+$ : 1.5
Tolerance		† Check tolerance
cm3/1000 str. +	: 3.0	+ cm3/1000s. +-: 2.3
Check tolerance		+ Shutoff solenoid
cm3/1000S. +- Shutoff solenoid	: 4.0	+ Volt : 12
Volt	: 12	Rated speed rpm : 1250
VOCC		+ Del. quantity
Rated speed rpm	: 2650	- cm3/1000 strokes : 32.1
Del. quantity	, 2330	Tolerance
cm3/1000 strokes	: 14.5	+ cm3/1000 str. $+$ : 0.5
Check tolerance		+ Check tolerance
cm3/1000s. +-	: 5.0	+ cm3/1000s. $+-$ : 2.3
Shutoff solenoid	4.0	+ Shutoff solenoid
Volt	: 12	+ Volt : 12
Control around non	. 2050	†
Rated speed rpm Del. quantity	: 2930	Ī
cm3/1000 strokes	: 2.5	ELECTR. SHUTOFF
Tolerance		+ CONTROL LEVER, IDLE STOP
cm3/1000 str. +-	: 2.5	-
Check tolerance		Rated speed rpm : 410
cm3/1000s. +-		+ Del. quantity
Shutoff solenoid		+ cm3/1000 strokes : 1.5
Volt	: 12	Tolerance
	2250	+ cm3/1000 str. +: 1.5
Rated speed rpm	: 2250	† Check tolerance
Del. quantity	. 7/. 0	+ cm3/1000s. +-: 1.5
cm3/1000 strokes	; 54.0	Ť

Spread cm3/1000 strokes : 5.0	
CHECKING LOAD-DEPENDENT START OF DELIVERY	
DELIVERY DIFFERENCE	
Rated speed rpm : 1250	
Del. quantity cm3/1000 strokes : -15.2	
Tolerance cm3/1000 str. +-: 2.0 Check tolerance	
cm3/1000s. + : 2.0 Shutoff solenoid	
Volt : 12	
TIMING-DEVICE TRAVEL DIFFERENCE	
Rated speed rpm : 1250 Del. quantity	
cm3/1000 strokes : -0.5	
cm3/1000 str. + : 0.1 Check tolerance	
cm3/1000s. +-: 0.1 Shutoff solenoid	
Volt : 12	
DELIVERY DIFFERENCE	
Rated speed rpm : 1250 Del. quantity	
cm3/1000 strokes : 5.0 Tolerance	
cm3/1000 str. +-: 3.0 Check tolerance	
cm3/1000s. +: 3.0 Shutoff solenoid	
Volt : 12	
TIMING-DEVICE TRAVEL DIFFERENCE	
Rated speed rpm : 1250	
SV travel mm : -0.5 Tolerance mm + : 0.2	
Check tolerance mm +-: 0.3	
Shutoff solenoid	

## START TRANSITION

Rated speed rpm Del. quantity	:	310	
cm3/1000 strokes	:	30.0	
Tolerance cm3/1000 str. +-	:	15.0	
Shutoff solenoid Volt	:	12	
Rated speed rpm	:	210	
Del. quantity			
cm3/1000 strokes Tolerance	:	55.0	
cm3/1000 str. +	:	15.0	
Shutoff solenoid		40	
Volt	:	12	

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 5,5
Tolerance mm + : +0,2
Dimension MS mm : 1,3
Tolerance mm + : +0,2

End of test-specification sheet

Volt : 12

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.96 Test oil : ISO 4113

Part no. : 0 460 426 246 Pump designation : VE6/12F125OR498-5

Customer—spec. information Customer : CDC

Motor : 6 BT 5.9B Power KW : 120.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C ←: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 109

Opening pressure

bar : 207
Tolerance bar + : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

#### REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,4
Tolerance mm + : +0,02
Outlet : D

#### INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1100 Aneroid pressure

hPa : 1000

Setting mm : 1.8
Tolerance mm +-: 0.2
Shutoff solenoid

Volt : 24

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 6.8
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 24

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

850 Rated speed rpm : Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 81.6 Tolerance cm3/1000 str. +-: 0.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. 5.0 Shutoff solenoid Volt 24

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +: 0.5 Spread cm3/1000 strokes : 5.0 Shutoff solenoid 24 Volt Check tolerance cm3/1000s. 6.0

Check tolerance		+ Rated speed rpm : 500	
cm3/1000s.	: 5.0	+ Aneroid pressure	
		+ hPa : 100	n
IDLE SETTING		+ Shutoff solenoid	
		· · · · · · · · · · · · · · · · · · ·	4
Rated speed rpm	: 325	1	
Del. quantity	, ,,,	Rated speed rpm : 450	
cm3/1000 strokes	: 10.0	Mateu speca i piii . 450	
Tolerance	. 13.5	+ SV travel mm : 2.	5
cm3/1000 str. +-	: 2.0	+ Tolerance mm +-: 0.	
Shutoff solenoid		+ Check	,
Volt	: 24	tolerance mm + : 0.	7
Spread		+ Shutoff solenoid	•
cm3/1000 strokes	: 5.5	+ Volt : 2	4
Check tolerance	. ,,,	1	<b>T</b>
cm3/1000s.	: 7.0	↓ KSB/AFB Volt : 2	4
		1 100/4/5 1010	<b>T</b>
		SUPPLY PUMP PRESSURE CHARAC	TERISTIC
		t Dated and an a 4250	
EIHLLIOAN CREEN N	CCIII ATTON	+ Rated speed rpm : 1250	
FULL-LOAD SPEED R	EGOCALTON	+ Aneroid pressure	0
Datad annual man	. 4700	+ hFa : 100	U
Rated speed rpm	: 1380	+ Supply pomp	-
Pressure hPa	: 1000	pressure bar : 7.	
Del. quantity	. (0.0	† Tolerance bar + : 0.	3
cm3/1000 strokes	: 60.0	+ Shutoff solenoid	,
Tolerance		+ Volt : 2	4
cm3/1000 str. +-	: 6.0	†	
Shutoff solenoid	. 2/	+ Rated speed rpm : 800	
Volt	: 24	+ Aneroid pressure	0
CTARTIAN FUEL DEL	TUEDY	+ hPa : 100	U
STARTING FUEL DEL	IVERY	+ Supply pomp	-
Data di anno al anno	. 400	pressure bar : 5.	
Rated speed rpm	: 100	+ Tolerance bar + : 0.	3
Del. quantity	05.0	+ Shutoff solenoid	
cm3/1000 strokes	: 85.0	+ Volt : 2	4
Tolerance	45.0	T	
cm3/1000 str. +		+ Rated speed rpm : 500	
Shutoff solenoid		+ Aneroid pressure	•
Volt	: 24	+ hPa : 100	J
		+ Supply pomp	_
		pressure bar : 4.	
		+ Tolerance bar + : 0. + Shutoff solenoid	5
			<i>i</i> .
INJECTION-PUMP TE	ST SPECIETCA	_	+
THOUGHT TON TONIE TE	31 SPECIFICA	T OVERFLOW QUANTITY	
TIMING DEVICE CHAP	RACTERISTIC	+	
		+ Rated speed rpm : 500	
Rated speed rpm	: 1250	+ Overflow quantity	
Aneroid pressure		+ ccm/10s : 63.	8
hPa	: 1000	Tolerance	
		+ ccm/10s +-: 22.	2
SV travel mm	: 2.5	†	
Tolerance mm +	: 0.4	+ Check tolerance	
Check		+ ccm/10s + : 22.	2
tolerance mm +	: 0.7	+ Shutoff solenoid	
Shutoff solenoid	<b>.</b> .	+ Volt : 2	4
Volt	: 24	†	
		+ Rated speed rpm : 1250	

Aneroid pressure hPa : 1	000	Rated speed rpm : Aneroid pressure	1250
Overflow quantity	1	hPa :	1000
Tolerance	7.7	Del. quantity cm3/1000 strokes :	84.2
	7.7	Tolerance cm3/1000 str. + :	2.0
Check tolerance ccm/10s +-: 2	7.7	Check tolerance cm3/1000s. +:	3.5
Shutoff solenoid Volt :	24	Shutoff solenoid Volt :	24
DELIVERY AND BREAKAWAY CH	+	Rated speed rpm :	
Rated speed rpm : 138	+	Aneroid pressure	1000
Aneroid pressure	000	Del. quantity	
Del. quantity	+	cm3/1000 strokes :	
Tolerance	0.0	cm3/1000 str. +-:	
cm3/1000 str. +-: Check tolerance	6.0	cm3/1000s. +-: Shutoff solenoid	4.0
cm3/1000s. + : Shutoff solenoid	8.0	Volt :	24
Volt :	24	Rated speed rpm : Aneroid pressure	850
Rated speed rpm : 146 Aneroid pressure	5	hPa :	1000
hPa : 1	000	Del. quantity cm3/1000 strokes :	81.6
	0.0	Tolerance cm3/1000 str. +:	0.5
	0.0	Check tolerance cm3/1000s.	2.5
Shutoff solenoid Volt :	24	Shutoff solenoid Volt :	24
Rated speed rpm : 150	0 ‡		
Aneroid pressure	000	MECHANICAL SHUTOFF	
.Del. quantity	1.5	Rated speed rpm : Aneroid pressure	1250
Tolerance	+	hPa :	1000
Check tolerance	1.5	Del. quantity cm3/1000 strokes :	1.5
Shutoff solenoid	1.5	Tolerance cm3/1000 str. + :	1.5
Volt :	24	Spread cm3/1000 strokes :	5.0
Rated speed rpm : 60 Aneroid pressure	0 ‡	Check tolerance cm3/1000s. +-:	1.5
	450	Spread cm3/1000 strokes :	
	3.9	Shutoff solenoid Volt :	24
cm3/1000 str. +-:	0.5	:	
	4.0	ELECTR. SHUTOFF	
Shutoff solenoid Volt :	24	CONTROL LEVER, IDLE	
	+	Rated speed rpm :	350

Del. quantity cm3/1000 stroke	es :	1.5
Tolerance		
cm3/1000 str. Check tolerance		1.5
cm3/1000s. Spread	+-:	1.5
cm3/1000 stroke	es :	5.0
FULL-LOAD STOP	CONTROL	LEVER
Rated speed rpm	n :	350
Del. quantity cm3/1000 stroke	es :	1.5
Tolerance cm3/1000 str.	<del>+</del> :	1.5
Spread cm3/1000 stroke	es :	5.0
Check tolerance		
cm3/1000s. Spread	+-:	1.5
cm3/1000 stroke	es :	5.0
IDLE DELIVERY		
Rated speed rpm	n :	410
Del. quantity cm3/1000 stroke	es :	1.5
Tolerance cm3/1000 str.	+ •	1.5
Check tolerance	•	
cm3/1000s. Shutoff solenoi		1.5
Volt	:	24
START TRANSITIO	N	
Rated speed rpm Del. quantity	ı :	240
cm3/1000 stroke	es :	80.0
cm3/1000 str. Shutoff solenoi		10.0
Volt	:	24
Rated speed rpm	) :	130
Del. quantity cm3/1000 stroke		100.0
Tolerance		
cm3/1000 str. Shutoff solenoi		20.0
Volt	•	24

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7 Tolerance mm + : + 0,1Dimension KF mm : 6,4

Toterance mm + : +-0,2

MS1 dimension mm : 1,1

Toterance mm + : +0,15/-0,1

CONTROL LEVER POSITION

Control lever

position YA mm : 34,8..38,8

Control lever

position YB mm : 43,9..49,1

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) #400/...

Edition : 02.07.96 Test oil : ISO 4113

Pert no. : 0 460 484 191 Pump designation : VE4/8F2200R574-1

Customer—spec. information Customer : VW Motor : 1.9L SD

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar : 147 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,9
Tolerance mm +-: +-0.2
Outlet : A

## INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 5.3
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Supply pomp > pressure bar : 5.9
Tolerance bar + : 0.3
Shutoff solenoid
Volt : 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 33.5
Tolerance
cm3/1000 str. +-: 0.5
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 525
Del. quantity
cm3/1000 strokes : 7.0
Tolerance
cm3/1000 str. + : 1.0
Shutoff solenoid
Volt : 12

### IDLE DELIVERY

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 9.5
Tolerance
cm3/1000 str. + : 1.0
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

+	- Tolerance mm +-: 0.4
HIGH IDLE SETTING	- Shutoff solenoid - Volt : 12
Rated speed rpm : 525	
Del. quantity cm3/1000 strokes : 9.5	Timing device
Tolerance	- solenoid Volt : 100
cm3/1000 str. +: 1.0	SUPPLY PUMP PRESSURE CHARACTERISTIC
Shutoff solenoid Volt : 12	- Rated speed rpm : 2000
+	- Supply pomp
FULL-LOAD SPEED REGULATION	- pressure bar : 8.0
Rated speed rpm : 2525	<ul> <li>Tolerance bar +-: 0.3</li> <li>Shutoff solenoid</li> </ul>
Del. quantity	- Volt : 12
cm3/1000 strokes : 10.5	- - Rated speed rpm : 750
cm3/1000 str. + : 2.0	- Supply pomo
Shutoff solenoid Volt : 12	pressure bar : 4.3
Volt : 12	- Tolerance bar +-: 0.3 - Shutoff solenoid
STARTING FUEL DELIVERY	- Volt : 12
Rated speed rpm : 100	- - OVERFLOW QUANTITY
Del. quantity	•
cm3/1000 strokes : 53.0	- Rated speed rpm : 2200 - Overflow quantity
cm3/1000 str. +: 13.0	- ccm/10s : 97.2
Shutoff solenoid	Tolerance
Volt : 12	- ccm/10s +-: 41.6
+	- Check tolerance
1	- ccm/10s +: 41.6 - Shutoff solenoid
	- Volt : 12
INJECTION—PUMP TEST SPECIFICATIONS	- - Rated speed rpm : 750
TIMING DEVICE CHARACTERISTIC	- Rated speed rpm : 750 - Overflow quantity
Detect on a Lorent control of	- ccm/10s : 63.8
Rated speed rpm : 2000	- Tolerance - ccm/10s +-: 22.2
SV travel mm : 7.9	•
Tolerance mm + : 0.4	- Check tolerance - ccm/10s +-: 22.2
tolerance mm +: 0.7	- Shutoff solenoid
Shutoff solenoid + 12 + 12	- Volt : 12
Volt : 12	- DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 750	•
SV travel mm : 3.5	- Rated speed rpm : 2525 - Del. quantity
Tolerance mm +: 0.4	- cm3/1000 strokes : 10.5
Check tolerance mm + : 0.7	Tolerance
tolerance mm + : 0.7 + Shutoff solenoid	cm3/1000 str. + : 2.0 Check tolerance
Volt : 12	- cm3/1000s. + -: 4.0
Rated speed rpm : 2000	Shutoff solenoid Volt : 12
+	•
SV travel mm : 1.3	Rated speed rpm : 2400

Del. quantity		† Check tolerance
cm3/1000 strokes :	27.0	+  cm3/1000s. + + : 2.2
Tolerance		→ Shutoff solenoid
cm3/1000 str. + :	5.0	+ Volt : 12
Check tolerance	3.0	. 12
		7
cm3/1000s. +-:	6.0	+
Shutoff solenoid		
Volt :	12	+ ELECTR. SHUTOFF
	, _	
	2/75	+ CONTROL LEVER, IDLE STOP
Rated speed rpm :	2675	+
Del. quantity		+ Rated speed rpm : 450
cm3/1000 strokes :	1.5	+ Del. quantity
Tolerance	11.5	
	4.5	+ cm3/1000 strokes : 1.5
cm3/1000 str. +-:	1.5	+ Tolerance
Check tolerance		+ cm3/1000 str. +-: 1.5
cm3/1000s. + :	1.5	+ Check tolerance
Shutoff solenoid	, , ,	+ cm3/1000s. +: 1.5
	40	
Volt :	12	+ Spread
		+ cm3/1000 strokes : 5.0
Rated speed rpm :	2200	1
Del. quantity		FULL-LOAD STOP CONTROL LEVER
	75.0	T FOLL-LOAD STOP CONTROL LEVER
cm3/1000 strokes :	35.0	†
Tolerance		+ Rated speed rpm : 450
cm3/1000 str. +-:	1.0	+ Del. quentity
Check tolerance		+ cm3/1000 strokes : 1.5
	2.2	
	2.2	+ Tolerance
Shutoff solenoid		+ cm3/1000 str. +-: 1.5
Volt :	12	+ Spread
,		+ cm3/1000 strokes : 5.0
Debed speed spe	/00	
Rated speed rpm :	<b>40</b> 0	+ Check tolerance
Del. quantity		+  cm3/1000s. + : 1.5
cm3/1000 strokes :	37.5	+ Spread
Tolerance	• • • • •	+ cm3/1000 strokes : 5.0
10 tel alice		T CIID/ 1000 SCIORES . 3.0
	7 0	•
cm3/1000 str. +-:	3.0	+
cm3/1000 str. +-: Check tolerance		‡
Check tolerance		‡
Check tolerance cm3/1000s. +-:	3.0 5.5	† †
Check tolerance cm3/1000s. + : Shutoff solenoid	5.5	‡ ‡
Check tolerance cm3/1000s. +-:		† †
Check tolerance cm3/1000s. + : Shutoff solenoid	5.5 12	† † †
Check tolerance cm3/1000s. + : Shutoff solenoid Volt :	5.5	† † †
Check tolerance cm3/1000s. + : Shutoff solenoid Volt : Rated speed rpm :	5.5 12	
Check tolerance cm3/1000s. + : Shutoff solenoid Volt : Rated speed rpm : Del. quantity	5.5 12 1250	† † † †
Check tolerance cm3/1000s. + : Shutoff solenoid Volt : Rated speed rpm : Del. quantity cm3/1000 strokes :	5.5 12	
Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid	5.5 12 1250 -3.3	Rated speed rpm : 180
Check tolerance cm3/1000s. + : Shutoff solenoid Volt : Rated speed rpm : Del. quantity cm3/1000 strokes :	5.5 12 1250	+ Del. quantity
Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid	5.5 12 1250 -3.3	+ Del. quantity
Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt :	5.5 12 1250 -3.3	Del. quantity cm3/1000 strokes : 57.0
Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt :  Rated speed rpm :	5.5 12 1250 -3.3	Del. quantity cm3/1000 strokes : 57.0 Tolerance
Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity	5.5 12 1250 -3.3 12 750	Del. quantity cm3/1000 strokes : 57.0 Tolerance cm3/1000 str. +- : 17.0
Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt :  Rated speed rpm :	5.5 12 1250 -3.3	Del. quantity cm3/1000 strokes : 57.0 Tolerance
Check tolerance cm3/1000s. + : Shutoff solenoid Volt : Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt : Rated speed rpm : Del. quantity cm3/1000 strokes :	5.5 12 1250 -3.3 12 750	Del. quantity cm3/1000 strokes : 57.0 Tolerance cm3/1000 str. + : 17.0 Shutoff solenoid
Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance	5.5 12 1250 -3.3 12 750 34.0	Del. quantity cm3/1000 strokes : 57.0 Tolerance cm3/1000 str. +- : 17.0
Check tolerance cm3/1000s. +: Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +:	5.5 12 1250 -3.3 12 750	Del. quantity cm3/1000 strokes : 57.0 Tolerance cm3/1000 str. + : 17.0 Shutoff solenoid
Check tolerance cm3/1000s. +: Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +: Check tolerance	5.5 12 1250 -3.3 12 750 34.0 1.5	Del. quantity cm3/1000 strokes : 57.0 Tolerance cm3/1000 str. + : 17.0 Shutoff solenoid Volt : 12
Check tolerance cm3/1000s. +: Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	5.5 12 1250 -3.3 12 750 34.0	Del. quantity cm3/1000 strokes : 57.0 Tolerance cm3/1000 str. + : 17.0 Shutoff solenoid
Check tolerance cm3/1000s. +: Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	5.5 12 1250 -3.3 12 750 34.0 1.5	Del. quantity cm3/1000 strokes : 57.0 Tolerance cm3/1000 str. + : 17.0 Shutoff solenoid Volt : 12
Check tolerance cm3/1000s. +: Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid	5.5 12 1250 -3.3 12 750 34.0 1.5 3.0	Del. quantity cm3/1000 strokes : 57.0 Tolerance cm3/1000 str. + : 17.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS
Check tolerance cm3/1000s. +: Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +:	5.5 12 1250 -3.3 12 750 34.0 1.5	Del. quantity cm3/1000 strokes : 57.0 Tolerance cm3/1000 str. + : 17.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3
Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :	5.5 12 1250 -3.3 12 750 34.0 1.5 3.0	Del. quantity cm3/1000 strokes : 57.0 Tolerance cm3/1000 str. + : 17.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm +- : +-0,1
Check tolerance cm3/1000s. +: Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid	5.5 12 1250 -3.3 12 750 34.0 1.5 3.0	Del. quantity cm3/1000 strokes : 57.0 Tolerance cm3/1000 str. + : 17.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3
Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm :	5.5 12 1250 -3.3 12 750 34.0 1.5 3.0	Del. quantity cm3/1000 strokes : 57.0 Tolerance cm3/1000 str. + : 17.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm +- : +-0,1 Dimension KF mm : 5,7
Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity Cm3/1000s. +: Check tolerance cm3/1000s. +: Check tolerance	5.5 12 1250 -3.3 12 750 34.0 1.5 3.0 12	Del. quantity cm3/1000 strokes: 57.0 Tolerance cm3/1000 str. +: 17.0 Shutoff solenoid Volt: 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm: 3,3 Tolerance mm: +: +-0,1 Dimension KF mm: 5,7 Tolerance mm: +-: +-0,2
Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes:	5.5 12 1250 -3.3 12 750 34.0 1.5 3.0	Del. quantity cm3/1000 strokes: 57.0 Tolerance cm3/1000 str. +: 17.0 Shutoff solenoid Volt: 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm: 3,3 Tolerance mm: +: +-0,1 Dimension KF mm: 5,7 Tolerance mm: +: +-0,2 Dimension MS mm: 1,3
Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance: Tolerance:	5.5 12 1250 -3.3 12 750 34.0 1.5 3.0 12 1250 33.5	Del. quantity cm3/1000 strokes: 57.0 Tolerance cm3/1000 str. +: 17.0 Shutoff solenoid Volt: 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm: 3,3 Tolerance mm: +: +-0,1 Dimension KF mm: 5,7 Tolerance mm: +-: +-0,2
Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes:	5.5 12 1250 -3.3 12 750 34.0 1.5 3.0 12	Del. quantity cm3/1000 strokes: 57.0 Tolerance cm3/1000 str. +: 17.0 Shutoff solenoid Volt: 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm: 3,3 Tolerance mm: +: +-0,1 Dimension KF mm: 5,7 Tolerance mm: +: +-0,2 Dimension MS mm: 1,3

CONTROL LEVER POSITION SET

Control lever

position YA mm : 36,0..40,0

Control lever

position YB mm : 47,7..61,3